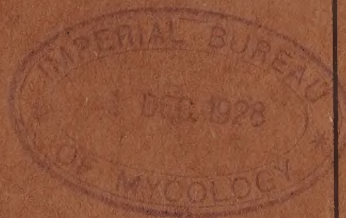


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COLONY OF MAURITIUS



ANNUAL REPORT

ON THE

DEPARTMENT OF AGRICULTURE

FOR THE YEAR 1927



PORT LOUIS

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No. $\frac{\text{Rae}}{5/28}$

THE HONOURABLE THE COLONIAL SECRETARY.

I have the honour to submit the report on the Department of Agriculture and on the agricultural conditions in the Colony for the year 1927.

PART I

AGRICULTURAL CONDITIONS IN 1927

The weather conditions experienced during the growing and harvesting seasons are summarised in the annexed tabular statement :

<i>Month and year</i>	<i>Temperature</i>	<i>Rainfall</i>
1926		
November	... Normal	... Very considerably above normal
December	... Normal	... Considerably above
1927		
January	... Markedly above normal	... Markedly above normal
February	... Slightly below normal	... Generally above normal
March	... Markedly below normal	... Considerably above
April	... Normal	... Normal
May	... Markedly below normal	... Below normal
June	... Considerably below normal...	... Considerably below normal
July	... Considerably below normal...	... About normal
August	... Normal	... Considerably above normal
September	... Below normal	... Normal
October	... Normal	... Generally below normal
November	... Slightly below normal	... Markedly below normal
December	.. Below normal	... Considerably above normal

As will be seen from the above summary, weather conditions were generally favourable during the earlier stages of the growing season but deteriorated somewhat afterwards. In the upper localities especially, the latter part of February and most of March were characterised by damp, cloudy weather with frequent heavy rainfall.

Cyclonic activity was unusually pronounced, but most of these disturbances passed too far from the Island to cause any appreciable damage to the crops. On January 28th, however, a cyclone passed within 100 miles eastward of Mauritius but wind velocities were neither high nor of long duration and, as a result, no serious damage was done.

Weather conditions were, during the ripening season, very favourable upon the whole.

SUGAR INDUSTRY

The preliminary compilation of factory results for the 1927 crop gave a total of 216.4 thousand tons against a forecast of 243 thousand tons. Very considerable disappointment in the harvested tonnage was experienced in the central and eastern localities, while in the southern districts, returns were generally below expectation. The extraction of sugar, per cent of cane, was somewhat below average and, in view of the weather conditions experienced during the winter season, decidedly below expectation.

Before the commencement of the crop, the appearance of the fields throughout the Island seemed promising, but when reaping occurred it was found that cane returns were below expectation especially in ratoons, while in some instances juices were weak. The condition appears to have been produced by a somewhat marked increase in the prevalence of disease particularly gumming on the White Tanna cane, which may or may not have been influenced by the low temperature conditions recorded in February and March.

The preliminary compilation of factory figures evinces a reduction of about 8% on a normal crop of 235,000 tons of sugar.

The following figures give the results, for each district, of the preliminary compilation of factory returns, compared with the production of the seven preceding years.

Sugar production in thousand metric tons

District	1927 Preliminary Compilation	1926	1925	1924	1923	1922	1921	1920
Pamplemousses & Riv. du Rempart	51.9	44.15	51.86	47.48	42.27	54.93	48.43	59.16
Flacq	33.3	26.02	43.06	39.06	35.51	39.56	33.77	45.35
Moka	30.9	31.27	34.68	30.73	31.34	29.39	28.04	37.58
Plaines Wilhems	15.0	17.14	18.18	18.79	15.01	20.95	14.54	21.36
Black River	8.7	7.18	8.66	8.47	7.17	8.65	6.15	7.57
Savanne	35.3	35.13	39.72	38.10	33.64	35.38	31.71	41.55
Grand Port	41.3	31.70	45.06	42.08	36.61	42.33	34.78	47.30
Total	216.4	192.59	241.22	224.71	201.55	231.19	197.42	259.87

Yield of vesou Sugar.—Of the estimated total of 216 thousand tons, 99% will, it is anticipated, consist of vesou sugars and 1% of low sugars. The following table exhibits the progress in this connection for the past 10 years:

Year	%Vesou	Year	%Vesou
1918	94.50	1923	97.61
1919	94.45	1924	98.34
1920	95.46	1925	98.21
1921	95.98	1926	98.10
1922	97.20	1927	99.0 (estimated)

The anticipation of much better market conditions for "extra fine" granulated, as compared with ordinary vesou has not, in general, been substantiated and it is doubtful whether further efforts will be made towards increasing the production of extra fine.

Factory work in 1927.—The average extraction of sugar per cent of cane was not in 1927 up to expectation. It is apprehended that, owing to diminished resistance, the White Tanna, which occupies about 60% of the area under cane, is wherever unfavourable conditions prevail, becoming easily infested with parasitic organisms.

The extraction figure for 1927 approximated to 10.45. Results for the previous decade are as follows:

Year	Commercial sugar extracted % cane	Commercial sugar extracted % sugar in cane
1918	10.95	80.4
1919	10.42	80.7
1920	10.76	...
1921	9.90	79.7
1922	10.58	...
1923	10.51	79.6
1924	10.28	79.7
1925	10.56	80.1
1926	9.94	79.5
1927	10.45 (estimated)	...

Factories conditions in 1927.—One more factory will probably be closed after the 1927 campaign thus reducing the total number of factories to forty three.

New sugar machinery to the value of Rs. 1,087,302 was imported during the year and tramway material to the value of Rs. 418,620.

A double crusher was installed at a factory, while the Lafeuille crystallizers referred to in the previous year's report were re-erected so as to avoid mechanical difficulties previously encountered with a resulting improvement in working.

A sugar dryer was installed at a factory on the central plateau.

Area under cultivation.—At the end of 1926, the area under cultivation approximated to 162,100 acres, i.e. a decrease of about 1.5 thousand acres on the 1925 figure. Of these, estate cultivation occupied 99,600 acres, while plantations off estates approximated to 62,500 acres.

Indian cultivation.—At the end of 1926, the area cultivated by Indian sugar planters approximated to 72,500 acres i.e. 44.7% of the total area under cane. As compared with 1925, there is a slight increase in sugar lands cultivated by Indians.

Disposal of the sugar crop.—The Sugar Planters' Syndicate continued operations during the year, controlling more than 80% of the sugar production of the Colony. The average sale price per 50 kilos for 1926 was Rs. 11.63 net. The distribution in grades was as follows:—

Extra Fine	...	...	11% of the total sold
Grade A vesou	...	...	87% " "
Grade B vesou	...	...	2% " "

The difference in sale price between the various grades being R. 0.50 per 50 kilos. For 1927, the preliminary figure for the average sale price approximates to Rs. 9.72 net per 50 kilos. In the net sale price for 1926, account is taken of the increase produced by the Government loan of Rs. 5,000,000 which is equivalent to a surplus value of about Rs. 1.32 per 50 kilos, on a total production of 190 thousand tons of vesou sugars.

As during previous years, the bulk of the sugar production went to the United Kingdom. Figures for the 1926-27 export year are as follows: Total Export: 187,084 tons; export to the United Kingdom: 181,272 tons (metric).

Up to the end of 1927, the total sugar export amounted to 123.6 thousand tons, of which 110.1 went to the United Kingdom.

Instrumental cultivation.—Tractors and ploughs to the value of Rs. 70,535, as against Rs. 67,000 in 1926, were imported in the Colony in 1927. There are at present 111 tractors in operation in this Colony most of which are Cletracs. There is little to add concerning the use of implements in Mauritius this season, the position being approximately the same as that shown in last year's report.

Irrigation of the Sugar Cane.—Distribution of water was commenced from the new reservoir at "La Nicolière", while work was continued on the reservoir at Midlands which forms part of the large scale project for irrigation in the North-Western area.

In order to bring about improvement in irrigation methods, the appointment was sanctioned of an Agricultural Irrigation Officer whose duties will be concerned with endeavouring to bring home to planters the importance of rational methods of applying irrigation water as summarised in the annual report of 1926.

Pests and diseases of the Sugar Cane.—A further centre of infection of *Phytlus Smithi* was recorded at the end of the year in Flacq. The multiplication of foci in this way is inevitable being given the extensive traffic which takes place throughout the Island, and eventually the infection of the whole Island with *Phytlus* appears inevitable.

It is estimated that the total area infected amounts approximately to 41,000 acres while the total area cultivated in cane is approximately 160,000 acres. The area on which actual damage is being experienced with the pest is limited to about 2,500 acres.

The control measures adopted are primarily responsible for this position and of these the work of the introduction of parasite *Tiphia parallela* is the most important. In centres of intense infection, the application of hand collection methods for adult insects and also larvae have continued to give good results.

During the year experiments with Cyanogas applied as an insecticide to virgin canes infected with *Phytlus* yielded results which appear promising. The situation in relation to this pest is reviewed in a separate report prepared by the Assistant Director and Entomologist.

During the year it became apparent that considerable damage was being occasioned to canes owing to the extensive prevalence of the gumming disease. Since 1925 the disease had been observed to be present in increasing quantity and during the crop of 1927 a detailed survey of the canes from all over the Island was made by the Department of Agriculture. The result of the survey indicated that the disease was present to a much greater extent than was previously supposed.

It was shown that the Big Tanna cane which is cultivated on 56% of the total area is by far the most affected, the average percentage of infected canes being as high as 15.0%. There seems to be good reason to believe that the reduction in the yield experienced for the crop of 1927 may largely be attributable to this cause. The situation was reviewed by the Director of Agriculture in an address delivered before the Chamber of Agriculture in December. The remedies are simple and consist chiefly in paying careful attention to selection of planting material and to the cultivation of resisting varieties.

As a result of the steps taken, greatly increased interest has been aroused among planters in the question of the plantation of varieties other than White Tanna and a considerably increased demand was seen for the new varieties introduced or raised by the Department of Agriculture during the past years.

Red Rot has also been in evidence though to a less extent than Gummosis. The varieties M.P. 55 and 131 have shown marked susceptibility to the disease, the susceptibility of White Tanna to this malady is less. There is no doubt that the question of finding an improved variety of cane is of vital interest to the sugar industry of the Colony.

Investigations in relation to the Sugar Industry.—The ordinary investigations carried out by the Department of Agriculture have been continued, including the raising and trial of new seedling canes, and manurial trials with cane.

The results of 13 years' experiments on the manuring of canes in Mauritius were published in bulletin form in the year as also were the results of the experiments with seedling canes.

The main conclusions to be drawn from the experiments with manures are summarised below :

1. Mauritius planting practice under the best conditions comprises manuring with heavy dressings of fumier, 20 to 30 tons per acre, to virgin canes combined usually with heavy dressings of molasses or scums or both, to which are added further dressings of artificial manures usually containing nitrogen as sulphate of ammonia or sometimes nitrate of soda or nitrate of potash, phosphoric acid as either superphosphate or guano phosphaté and potash usually as nitrate; the dressings of artificial manures are given in two and sometimes in three applications. This represents an extremely rich manurial application.
2. In relation to virgin canes it has been shown by repeated experiments that when dressings of organic manures, i.e. fumier and molasses are given, the addition of nitrogen as sulphate of ammonia usually is largely without effect, and the same applies very largely to phosphoric acid and potash. In cases where natural manures in such liberal quantities are withheld, however, a profitable increase frequently occurs from the application of artificials though even under these conditions the effect of nitrogen is often variable.
3. The advantage supposedly derived from applying artificial manures in two or more dressings is not borne out by experiments, more satisfactory results are obtained by making the application in one dressing fairly early in the canes' growth.
4. In relation to ratoons, the same holds true up to a certain point especially when dressings of organic manures are given.
5. Artificial manures applied in one crop do not as a rule show any residual action in the next succeeding crop under conditions encountered in Mauritius.
6. Molasses applications show a beneficial effect, provided the fertility of the land to which they are applied has not already reached the limit of productiveness to which it can be forced.
7. Ploughing is also capable of increasing the yield subject to the same reservation as under 6.

Work on the soil survey of the Moka district was continued and the results are now in process of compilation for publication. The question of the availability of phosphates in Mauritius soil was further investigated. A series of determinations was made of the fuel value of bagasse from different varieties of canes, while the Botanical and Chemical Divisions collaborated in an attempt to establish some correlation between the Hydrogen Ion concentration of soil extracts and the incidence of root disease. Some preliminary investigations were also made concerning the sucrose content of a local cane called the Uba Marot. In the Entomological Division investigations were continued on the combatting of *Phytalus Smithi* with *Cyanogas*. The Botanical Division has as already recorded conducted considerable investigations on the occurrence of gummosis and with the object of ascertaining which varieties are most likely to be susceptible thereto. Root disease was also investigated to a certain extent; in the opinion of the writer infections of this nature are mostly secondary in character and due to unsuitable soil conditions. On the statistical side a series of investigations was carried out in relation to the history and development of the Mauritius Sugar Industry together with an investigation on the factory cost of production. These investigations were embodied in a report presented to the Mauritius Sugar Industry Conference.

General conditions in relation to the Sugar Industry.—The continuation of low prices for sugar has resulted in the maintenance of the difficult conditions recorded in the previous year. These difficulties have been enhanced by the increased taxation necessitated by the loan of Rs. 5,000,000 distributed as an export bonus on the sugar of the 1926 crop. The outlook for the future of the market is obscure, but it is hoped that negotiations for the regulation of the output of sugar instituted by the Cuban Government combined with the ordinary increase in the world's consumption of sugar may soon lead to a more stable position.

As has repeatedly occurred in the past, the difficulties at present being experienced have lead to considerably increased activity in relation to the sugar industry. In April 1927, the first Sugar Industry Conference was held under the auspices and with the assistance of the Government, the president being Sir Henry Leclézio. At this Conference a number of questions relating to the sugar industry were discussed and important resolutions were carried, of these the most noteworthy had relation to the establishment of a Reserve Fund for the Industry to be used for the purpose of effecting experiments and improvements in factories and field, facilitating the visits of technical men from abroad and of local technical men and other planters to other countries, and financing of the representation of the sugar industry in England. Legislative effect was given to the proposal by Ordinance No. 7 of 1927, whereby funds were provided by means of a special tax of 4 cents of a rupee per

100 kilos of sugar exported. The administration of the fund is placed into the hands of a Committee composed of 9 members nominated by various public bodies connected with the sugar industry, under the presidency of the President of the Chamber of Agriculture. With the consent of the Government the Director of Agriculture was included among the members nominated. The subjects discussed comprised the type of sugar to be manufactured, methods of making payment for canes supplied to factories and the extension of the research facilities of the industry. In this connection the suggestion was made that assistance might be forthcoming from the Empire Marketing Board for the extension of research; this proposal is now under discussion with the Secretary of State.

SUBSIDIARY AGRICULTURAL INDUSTRIES.

Interest in the question of the development of subsidiary industries has been well maintained during the year. The existing depression of the sugar industry has materially assisted to maintain this interest and it is to be hoped that as a result of these very extensive efforts the entire dependence of the Colony on one single industry may become appreciably reduced, thereby greatly strengthening the economic position.

In this connection it is opportune to emphasise the fact that in Mauritius any development of resources which can be of real value to the place is to an extent dependent on the possibility of an export trade. The point is not perhaps obvious at first sight since with a population of 400,000 it would seem that the local demand for many articles which can be produced locally should be sufficient to maintain a stable position. In point of fact experience has demonstrated that this view is erroneous. Entire dependence on local consumption entails in the first place that the local purchasing power for locally produced commodities is dependent on the market for the staple export product namely sugar, while secondly conditions in Mauritius are such that when the market depends on local supply and demand, the operations of local buyers and intermediaries are liable to effect such violent fluctuations in the market price that real stability can never be achieved. In consequence it should be regarded as axiomatic that the subsidiary industries which will repay time and trouble expended on their development should contain the possibility of an export trade which will serve as an effective regulation of prices paid for such quantities as may be consumed locally.

Mauritius Hemp.—Market conditions remained dull throughout the year, quotations for Prime hardly rising above Rs. 320 per ton. The export for the past ten years has been as follows:

Year		Tons	Year		Tons
1918	...	493	1923	...	600
1919	...	2,535	1924	...	1,247
1920	...	875	1925	...	2,158
1921	...	287	1926	...	2,369
1922	...	780	1927	...	1,905

The gross value of the fibre exported in 1927 was Rs. 665,936.

The outstanding event of importance was the inauguration of the Mauritius Hemp Syndicate, which by the end of the year was in full working order. As stated in the previous report the Syndicate owes its existence to an attempt to secure co-operation among growers for the purpose of providing improved grading and better baling. With the aid of a grant from Government a Baling and Grading Factory has been erected in Port Louis. The undertaking is fitted with electric cranes for the handling and transport of fibre and with electrically operated hydraulic baling presses of the latest pattern. The Factory was formally opened by His Honour the Officer Administering the Government on September 24th, and by end of the year had handled 1136 bales of fibre. The effect of those operations has been seen in a marked improvement in prices for Mauritius Hemp. The Factory is controlled by a Committee comprising representatives of the leading producers of the Mauritius Hemp and on this Committee the Government is represented by the Director of Agriculture.

During the year the sisal plantation at Grand Bay was worked and the Robay machine there existing operated, 70 bales of fibre being turned out. The fact that this cultivation has again been resuscitated is of interest, as it is believed that sisal properly cultivated in suitable localities is capable of giving remunerative returns in the Colony.

Tobacco Industry.—Considerable progress has been recorded in connection with the Tobacco Industry. At the end of the financial year it was estimated that 2,000 acres were under cultivation in this crop. Enquiries made among the various firms of manufacturers purchasing tobacco leaves from curers elicited the fact that during the year a total of 320,000 kilos of tobacco had been purchased from growers of an estimated value of Rs 500,000. The industry has therefore risen to the second place after sugar. Practically the whole of the tobacco produced has been consumed locally and on a moderate computation the sales of locally produced tobacco have been in the region of Rs. 1,000,000 representing capital which

has been retained in the Colony and which would otherwise have gone to outside sources of supply. It cannot be gainsaid that these developments have in many directions appreciably relieved the financial stringency resulting from the low price of sugar.

A great improvement has taken place in methods of production: flue curing methods are now generalised. At the end of the year 41 flue curing barns had been erected. Instructions in flue curing methods were given regularly to planters by the start of the Tobacco Division of the Department of Agriculture and also by the British American Tobacco Company.

The very marked growth of the industry and the loss in revenue which accrued to Government owing to the great diminution in importations necessitated provision for the collection of an excise duty. The matter was referred to the Customs Tariff Advisory Committee which recommended the imposition of an excise at the rate of R 1 per kilo of tobacco manufactured in the Colony. Means for the collection of the tax were worked out by the Assistant Collector of Customs in consultation with the Director of Agriculture and embodied in an Ordinance No. 46 of 1927 which passed the Council of Government at the end of the year. In framing the provision for the Ordinance, efforts were made to avoid interference with growers, while safeguarding the interests of Government. In bringing this about, valuable assistance was rendered by the newly formed Tobacco Growers Association.

During the year the growth of the industry necessitated that attention should be paid to the exporting of the surplus production of tobacco. The following statement of operations in this connection was issued as a Communiqué to the local press at the end of the year and summarised the position.

THE EXPORT OF TOBACCO FROM MAURITIUS

In November 1926 it was foreseen that a situation similar to that which is actually existing in Mauritius was inevitable if, as then seemed likely and has since been fully verified, the local production of leaf exceeded the capacity of the local market to absorb it, it was obvious in these circumstances that the only means of handling this surplus would be by exportation. The conviction was held also that the only possibility of developing an industry which would be of real value to the country lay in making exportation the principal means for disposing of the produce, inasmuch as industries which depend entirely on the local market are liable to violent fluctuations owing to the relatively limited demand, while they themselves depend on the prosperity of the staple industry of the place, i.e. sugar. Accordingly enquiries were made so long ago as May 1926 by the Department of Agriculture through the British Empire Producers' Organisation with a view to entering into relation with a firm of tobacco brokers who would be willing to handle Mauritius tobacco in England. At the same time Sir Louis Souchon was written to in the same sense. The British Empire Producer's Organisation and Sir Louis Souchon both strongly recommended Messrs Clagett Brachi & Co. as a leading firm of tobacco brokers who would take the matter up. These gentlemen accordingly were communicated with and arrangements made to submit samples and trial shipments; samples were sent forward in October 1926 and favourably reported on; subsequently necessary arrangements for handling shipments were made with Messrs Clagett Brachi, and a trial shipment of 11 bales sent forward in April 1927. In order to assist further in bringing Mauritius tobacco before the London market an exhibit of Mauritius tobacco was also arranged at the Tobacco Exhibition of April 1927, while close touch has been maintained with Messrs Clagett Brachi throughout. It will thus be seen that the London end has been adequately prepared.

In relation to the organisation of an export trade in Mauritius the question was discussed with Government and on the recommendation of the Director of Agriculture a committee was appointed by His Excellency in February 1927 to report on the matter. This Committee consisted of the following gentlemen: The Director of Agriculture, The Honourables M. Martin and Louis Noël, Messrs P. de Sornay, J. J. Gibson, P. B. Mookteram, H. Delisse A. W. Brown, M. Lagesse.

The Committee recommended:

1. The standardisation and grading of the tobacco.
2. The establishment of a Government Grading Warehouse under the supervision of the Department of Agriculture.
3. The provision of compulsory grading by the Government Grading Warehouse before export.
4. That a scheme of advances on produce for export should be instituted up to a total value of one half the estimated value followed by a "reglement" when the proceeds are received and after deductions of the actual expenses plus interest at 6 per cent.
5. That an Advisory Committee be appointed to assist the Director of Agriculture in the management of the scheme.

All these recommendations have been carried out.

Suitable premises for a Tobacco Grading Warehouse were acquired, the necessary equipment provided and an Officer in charge appointed as from the 1st of July 1927. At any moment from that date the Warehouse has been ready to handle tobacco for export so soon as it should come forward; while as has been shown above the necessary machinery for handling the crop has been created in London.

For the operation of the Grading Warehouse, an Advisory Committee has been appointed by His Excellency the Governor. The personnel of this Committee is as follows: The Director of Agriculture, Messrs H. Delisse, L. Enouf, A. W. Brown, F. Lincoln and P. de Sornay.

In full consultation with the Committee, regulations have been prepared for the operation of the Warehouse—a copy of these regulations is appended. They have been published in the Official Gazette and fairly circulated among planters. It will be observed that they provide for the export of tobacco either through the Grading Warehouse or if planters prefer the alternative by their own means. If the planter elects to export his tobacco through the Grading Warehouse, advances up to $\frac{1}{2}$ the estimated sale price are made to growers from funds provided by Government as recommended by the Committee with interest at 6 per cent. In these circumstances the actual cost of grading and shipment is regarded as a further advance and will be recouped from account sales when received. If on the other hand planters prefer to export their tobacco independently they can take delivery at the Warehouse on payment of the grading and packing fees. The only fact that is compulsory is Government Grading and in accordance with the recommendations of the original Committee under Proclamation No. 15 of 1927, no tobacco can be exported unless it has been graded and certified by Government. This is regarded as an essential provision. The arrangements made are, it is considered, as complete as can reasonably be foreseen, they are based on practical experience of similar undertakings which have been successfully operated in other countries, and compared with similar standards elsewhere are distinctly favourable to the planter.

All these provisions have been in existence for 8 months. During that period the necessity for organising an export trade has been insisted upon whenever occasion offered, however no tobacco came forward for export in any quantity until December last. In consequence no commercial shipments have yet been possible and with the advice of the Grading Warehouse Committee no shipment will be made until a sufficient quantity of Tobacco of first quality comes forward to enable the best grades to be included in the first shipment as it is felt that so much depends on the impression created by the first commercial shipments that it would be unwise to send forward consignments which were not truly representative of the best the Colony can produce and that in the best interests of the industry it is essential that at any rate a proportion of the best leaf the Colony can produce should be included in the early shipments.

From the above it will be seen that the question of organising an export market for tobacco has been engaging careful attention for the past 21 months. All possible steps have been taken to assure developments along safe and sound lines, that an export has not so far developed is merely due to the fact that no tobacco for export has until recently come forward.

There are now six firms manufacturing tobacco in the Colony, of these five are locally owned and managed, while the remaining one is the Mauritius Branch of the British American Tobacco Company. The introduction into this Colony of modern machines and modern methods has done much to place the industry on a stable basis.

An event of importance was the formation of the Tobacco Growers Association. This body has served a useful purpose in providing means for safeguarding growers' interest and discussing questions concerning the industry with Government. Acting in conjunction with the Association the Department has taken the necessary steps for the issue of a Proclamation prohibiting the ratooning of tobacco on account of the risk of spreading Mosaic disease. Provision has been made for an inspection service for tobacco plantations and steps taken for the establishment of a seed farm and experiment station for the investigation of tobacco questions at Beau Bassin.

In relation to the industry, investigations made during the year showed that Mosaic on tobacco was capable of being transmitted from one plant to another and that the tomato plant could serve as an intermediate host for the disease. In view of the ample facilities now existing for the purchase of leaves, the Government Tobacco Factory was closed during the year. There is no doubt that the early operations of this undertaking combined with the efforts of the Department of Agriculture to foster this industry, which for many years passed unrecognised, are mainly responsible for the great expansion which has taken place during the past two years.

Fruit Canning and Preserving.—During the year much attention has been devoted to the investigation of the possibility of establishing a fruit canning and preserving industry. Attention has been principally devoted to the cultivation of pineapples and canning the fruit for export. Experiments have shown that Mauritius is naturally admirably suited for the production of this fruit, and that given proper cultivation and attention pineapples equal to those produced in any part of the world can readily be grown. The crop is markedly cyclone resistant and in consequence offers special attractions. As part of the investigation undertaken, the Chief Agricultural Officer of the Department of Agriculture, Mr. C. A. O'Connor, was sent on special mission to South Africa in March, for the purpose of studying the important pineapple growing and canning industry in the Cape Province. Mr. O'Connor presented a full report on his investigations which showed that the operations

required could readily be performed in Mauritius. To provide for developments, a Committee was formed under the presidency of the Director of Agriculture which on the basis of Mr. O'Connor's report proceeded to enquire into the possibilities of launching a project locally. By the end of the year this Committee had completed its labours and was in a position to put forward a definite scheme. The proposals comprised the erection of a modern and up to date canning factory in Port Louis combined with the cultivation of about 200 acres under pineapples which would be linked to the factory by means of long term contracts. The necessary Capital required is to be raised by subscriptions locally, while application is being made to the Government for a grant in aid and for an additional advance bearing interest to assist in the floatation of the project. The scheme also comprises provision for the making of jams, jellies and preserves from fruits other than pineapples during the time the factory is not engaged in handling the pineapple crop. In anticipation of the floatation of the scheme an appreciable area has already been planted with pineapples, while the Department of Agriculture have produced and are propagating a number of introduced varieties. Of the pines grown locally, one known as the Victoria or Queen pine is also grown in Réunion and in South Africa; it is a small pine, very sweet, with spiny leaves. The other locally known as the Maingard pine is probably a variety of the Smooth Cayenne which has become acclimatised to local conditions; it is a larger pine with smooth leaves not so sweet as the Victoria pines, the fruit of which very often weighs as 7 lb. each. Provided the difficult incident on marketing the produce in competition with Malayan, Hawaiian and South African fruits can be overcome, there is every reason to believe that in this direction a very valuable subsidiary industry has been found.

Oil Crops.—The Innova Refinery continued to operate during the year, handling principally copra from the Oil Islands and Pistache (ground nuts). The attempt made to extend the cultivation of ground nuts locally has had rather disappointing results. On the other hand increasing attention had been paid to the coconut industry of the Oil Islands, dependencies, and there is a marked tendency to improve cultural methods. In connection with the Innova Refinery a small soap factory is maintained which does a fair trade in soap manufactured from locally produced oil.

Alcohol.—The production of alcohol for the past ten years according to Treasury returns is as follows:

1917-18	...	1,602,414 litres	1922-23	...	496,237 litres
1918-19	...	1,529,315 "	1923-24	...	523,892 "
1919-20	..	1,666,000 "	1924-25	...	638,196 "
1920-21	...	1,900,000 "	1925-26	...	490,113 "
1921-22	...	1,749,994 "	1926-27	...	688,077 "

As a result of the enquiries conducted by the Commission appointed by Government to investigate matters in connection with the remodelling of the existing liquor laws, the restrictions on the sale of spirits have been almost entirely removed and the old policy practically reverted to in this respect.

The distillery annexed to Medine Factory worked very satisfactorily during the year and alcohol for human consumption and as power spirit was produced together with alcohol and ethers for pharmaceutical and other industrial purposes. The distillery at Richelieu resumed work and produced alcohol for human consumption and for fuel.

There are at present 5 distilleries at work on the Island.

Coffee.—There is no very marked increase of production to record in relation to this industry, but signs exist that interest in the possibility of coffee production is being awakened. Considerable numbers of coffee plants of different varieties continued to be sent out from Government Nurseries and in due course should appreciably influence the output. While arabian coffee cannot be grown satisfactorily owing to leaf curl disease, Liberian and Robusta coffee thrive well and climatic conditions especially in the lower parts of the Island are suitable to the crop. Developments hinge on planters awakening to the fact that progress in this industry is only possible when an export trade is envisaged.

Tea.—The tea industry has continued to exist under very depressed conditions and the annual production is now estimated to be approximately 20,000 kilos. The crop has been cultivated for about 40 years and in the last decade the industry has steadily declined notwithstanding the fact that it has received protection on the local market by means of a tax on imported tea amounting to 60 cents per kilo. The industry has not been able to maintain itself in the face of foreign competition, chiefly on account of the inferior quality of the produce and fluctuating demand. Attention was directed to the tea industry owing to the Government having decided to lower the rate of duties on imported tea with a view to reducing the cost to the consumer. This industry affords an admirable example of the result of endeavouring to foster an industry in the absence of the possibility of an export outlet. The lands suitable for tea growing are sparsely inhabited and labour is difficult, while even under favourable conditions it is doubtful whether labour rates locally could enable tea to be produced at prices which could compete with Indian and Ceylon produce on the open market. In the absence of this possibility the industry has led a chequered

existence and is now tending to extinction, unless it should subsequently appear that an export trade is possible there is no real future for the industry notwithstanding the fact that local conditions in the higher parts of the Island are very well adapted to tea growing.

Vanilla and Spices.—There is little or no progress to record in relation to vanilla, although scope exists for development. The opinion may again be expressed that legislative restriction on vanilla imposed many years ago at the request of vanilla planters has had the effect of killing the industry. Small quantities of vanilla were produced on the recently acquired Government property Solitude in Rodrigues and sold at moderately remunerative prices. It seems possible that if planters could be brought to see the necessity for modifying existing laws developments might perhaps take place.

Food Crops.—A certain amount of interest continued to be maintained during the year in the production of food crops. In 1926 maize was grown on about 2,500 acres and manioc on 3,500 acres. In vegetables cultivation an appreciable increase was in evidence and the total under this head approximated to 4,000 acres.

The great increase in the cultivation of tobacco has, it is anticipated brought about for 1927 a perceptible reduction in the acreage under food crops as, in many cases, tobacco has displaced maize and manioc and, to a less extent, vegetables. Figures in this respect are not as yet available.

Live Stock.—Importation of cattle from Madagascar numbered 6,354 heads of a total value of Rs. 393,104.

The recrudescent interest in cattle breeding was maintained during the year. The Stock Breeders' Association introduced a Charolais bull and cow from France, and also Angora goats from South Africa. The question of assisting the breeding industry by means of a grant-in-aid from the Development Fund was considered during the year, and an appropriation of Rs. 30,000 for the purpose approved. The administration of the fund so created was entrusted to a Committee nominated by the Governor under the Chairmanship of the Director of Agriculture. The Committee have prepared a scheme of bonuses for importations of stud animals and are considering a scheme for the improvement of pasture conditions by means of prizes, both schemes to be financed from the grant-in-aid.

During the latter part of the year the long drought directed attention to the advantages likely to be obtained from increase attention to the maintenance of pastures. With a few notable exceptions this important question is to a large extent neglected and cattle are allowed to graze on land which is covered by scrub and bush. It is to be hoped that ultimately breeders will realise that the supposed advantages to be derived from this system are in reality illusory and that separation of the areas devoted respectively to the raising of firewood and to grazing will produce much more remunerative returns than the system which involves their being run conjointly.

The question of milk supply has also attracted much attention during the year. The Government Dairy continued to operate and to produce pure milk for supply to hospitals and to the general public. Attention was directed to this undertaking by the fact that the relatively high cost of production e. g. 35 cents per litre was made the subject of discussion in the Council of Government. In consequence the Officer Administering the Government appointed a Committee consisting of four unofficial members of the Council together with the Director of the Medical and Health Department and the Director of Agriculture as Chairman, to investigate and report on the Dairy. This Committee had not completed its labour by the end of the year, but its investigations have shown that the Dairy is producing milk far superior to any other produced in the Colony and that it is run on modern hygienic lines. It has further been shown that the high cost of production of milk was in part due to the Dairy being worked below its economical strength and that the enlargement of the Dairy to the size originally contemplated will have the effect of markedly reducing the cost of production.

The Société des Eleveurs continued to function during the year, and provided means for discussion of questions relative to animal husbandry. The sub-section of the Society maintained a high degree of activity and thanks to its efforts very considerable interest has been stimulated in the raising of poultry, rabbits and similar enterprises. Another direction in which advance has been achieved is in the raising of poultry on modern lines, one breeder having instituted regular line records for his hens.

Animal Diseases.—The campaign against Surra was maintained on existing lines. As the result of the increase in the number of Stock Inspectors the total number of animals inspected was approximately double that of previous year. The number of animals examined and the number of cases detected in each of the past four years is shown below.

Year		Number of animals examined	No. of infected animals examined	Percentage of infected animals on total examined
1924	...	5,959	37	0.5%
1925	...	7,330	59	0.8%
1926	...	7,506	44	0.6%
1927	...	13,488	72	0.5%

Up to October only 42 cases had been detected, but between then and the end of the year 30 cases were found due to local recrudescences; these were promptly dealt with and notwithstanding this and the greatly increased number of animals examined the total percentage of cases recorded shows a satisfactory diminution. From a practical point of view the disease may be regarded as thoroughly under control and the menace which it offered for many years of proving at almost any moment a source of considerable loss, is now removed. The system of treatment of infected bovines through the medium of estate infirmiers continues to give excellent results.

Outbreaks of Piroplasmosis were detected on two herds during the year, in all approximately 20 animals were affected. This represents the first outbreak of this disease for three years, and it is believed that the control measures adopted including widespread use of dipping tanks has reduced the incidence of this disease very greatly.

Attention was directed to the occurrence of tuberculosis among breeding herds and a scheme for the regular survey of such herds was instituted. 376 animals were submitted to the Tuberculin test during the year with 18 positive reactions.

During the year the provisions of the Animal Diseases Prevention Ordinance requiring the notification of deaths of all cattle and horses to the nearest Police Station were enforced as far as possible, and 237 deaths were notified. This provision enables possible foci of infection of disease to be located with great ease and has materially enhanced administrative efficiency.

Steps were taken during the year to organise the supply of the B.C.G. Vaccine for stock as a prophylaxis against tuberculosis, the work being performed by the Veterinary Division acting in collaboration with the Bacteriological Laboratory.

At the end of the year dry weather conditions were responsible for considerable mortality among stock and probably were answerable for the apparent recrudescence of Surra recorded above, owing to lessened resistance on the part of animal carriers of the disease.

The prevalence of *Stomoxys nigra* has always been a scourge on herds of cattle and it may be regarded as practically certain that the insect is the vector of Surra. In connection with control measures against this pest, mention may be made of an ingenious fly trap for use in connection with herds devised by Mr. L. Bourgault, Manager Ferney S. E., and successfully operated by him on that property.

Quarantine measures were as usual rigidly enforced during the year.

The Veterinary Division of the Department has now been in existence for 12 years; as a result of its efforts the incidence of stock disease in the Island has been greatly reduced, and the health of animals improved, while also serious introduction of disease from abroad has been prevented with the exception of East Coast Fever in 1921 and Foot and Mouth Disease in 1916; in both these cases however measures taken rapidly eradicated these maladies.

The result of this administrative provision can therefore be regarded as having been of great value to the Colony.

AGRICULTURAL EDUCATION.

The Mauritius Agricultural College continued its operations during the year, these are reviewed in a separate report. Attendance at the College continued to be well maintained, while pupils of the Institution have so far succeeded in obtaining employment on the completion of their courses. The curriculum of instruction was again revised during the year; it comprises a thorough grounding in the various sciences underlying agriculture and its application to local conditions, which falls into line with the curriculum at similar institutions in larger Colonies. The College has proved a useful recruiting ground for officers of the Department of Agriculture, and in any scheme for the extension and further organisation of vocational training in the Colony, which sooner or later must be considered, the systematic work performed in this direction should form a valuable indication for further developments.

In relation to Elementary Education the scheme for the Farm School was approved by the Secretary of State during the year and provision for its inauguration made in the Estimates. The building was practically completed by the end of the year and it is anticipated that the institution will be in working order early in 1928. The course provided allows for two years' training to 16 boys recruited from the Elementary Schools and after completion of their course, provision is made for the recruitment each year of 4 junior cadets in the Agricultural and Forestry Departments, from the ranks of which appointments as Overseers and Forest Rangers will be made as vacancies occur.

Provision was made during the year for the further extension of School Gardens in the Colony. The Education Code being altered in such a way as to provide that all Elementary Schools will be required to maintain School Gardens unless it can be shown that facilities do not exist at the point where the school is situated.

Two out of the three sanctioned posts of Assistant Agricultural Inspectors were filled during the year, and this has enabled progress to be made in connection both with the extension of School Gardens alluded to above, and also for the provision of increased itinerant instructions to small planters.

Proposals were considered during the year for the systematisation of teaching of Nature Study in Primary Schools and conjointly with this the courses of lectures delivered to Teachers in training at the Teachers' Training College were revised so as to bring the instructions into line with the the new schedule proposed for the Elementary Schools. The proposed course for teachers will be held at the Agricultural College and will comprise practical gardening in addition to lectures and laboratory work, thus securing co-ordination of the various line of work.

Co-operative Credit Societies.—The work of these Societies is reviewed in a separate report. Some changes in the administration of this Sub-Department has been made and signs are not wanting that matters in relation to the movement are improving. The conviction may again be expressed that in certain parts of the Colony, Societies of this type based on the Indian model are capable of accomplishing a great deal of useful work but that to secure results unceasing vigilance is essential.

AGRICULTURAL SHOWS.

An Agricultural and Industrial Show was held in Pamplemousses Gardens in September 1927. A separate report on this Show has been furnished. The Exhibition was a considerable success and attracted a large attendance. Particular reference may be made to the excellent series of exhibits of Tobacco which appeared. The Show was opened by His Honour Sir Allan Granum Kt., C.M.G., Officer Administering the Government.

RODRIGUES.

Agricultural work in the dependency has been maintained on established lines. An Agricultural Show was held in September. During the latter part of the year dry weather conditions prevailed which caused some shortage of food crops. Attention may be directed to the encouraging results obtained from the cultivation of long staple upland cotton which appears to offer some prospects for development.

PART II

WORK OF THE DEPARTMENT OF AGRICULTURE FOR THE YEAR 1927.

Staff Changes.

Mr. E. F. S. Shepherd, Botanist and Mycologist, returned from leave on December 19th. During his absence in England he represented Mauritius at the Imperial Agricultural Research Conference in October.

Mr. W. H. Edwards, Lecturer in Entomology, Agricultural College, acted as Botanist, Mr. A. Moutia, Scientific Assistant, Entomological Division, acted as Lecturer in Entomology, and Mr. J. Vinson acted as Scientific Assistant, Entomological Division, during Mr. Shepherd's leave.

Mr. F. Berchon, Scientific Assistant, Chemical Division, proceeded on three months leave of absence on October 20th.

Messrs. T. Rivalland and W. Haddon were appointed as Assistant Stock Inspectors as from January 1st and February 1st respectively.

Mr. G. Corbett, Agricultural Superintendent Rodrigues, seconded for duty as Tobacco Officer, proceeded on 9 months leave on October 3rd.

Mr. E. Lesur, Agricultural Superintendent, was appointed to replace Mr. Corbett as Tobacco Officer during his leave.

Mr. N. Mc. Gregor, Assistant Agricultural Superintendent, seconded for duty in Rodrigues, resigned his appointment on November 8th.

Mr. A. Valasois, Overseer Government House Grounds, was appointed Assistant Agricultural Superintendent, as from November 8th.

Mr. C. A. O'Connor proceeded on special mission to South Africa in March and returned in May.

Mr. Micouin was appointed Assistant Agricultural Instructor as from January 1st. He relinquished his appointment on June 30th.

Mr. R. Olivier was appointed temporarily as Assistant Agricultural Instructor as from October 1st.

Mr. B. Emmanuel, Assistant Stock Inspector, was provisionally appointed Overseer Government House Grounds as from November 8th.

Mr. E. Cartier, Overseer Beau Bassin Experiment Station, was transferred to the Veterinary Division on November 8th as Assistant Stock Inspector.

Mr. D. Ramphul, Overseer Tobacco Section, was appointed Overseer Beau Bassin Experiment Station as from November 8th.

Mr. C. Boolkah reverted to his substantive appointment as Second Assistant Overseer Royal Botanical Gardens as from November 8th.

Mr. D. Kissoonah was appointed provisionally as Overseer of the Farm School as from November 8th.

Mr. T. Manrakhan was appointed Overseer Tobacco Section as from November 8th.

Mr. R. Jauffret was appointed Officer in charge Beetles Destruction Moka as from January 1st; he was transferred to Rodrigues as Acting Agricultural Superintendent on the 8th December.

Mr. P. Regnard was appointed Officer in charge Beetles Destruction Savanne on the 1st October; he was transferred to Moka as Officer in charge Beetles Destruction on the 8th December.

Mr. Y. Lefebure was appointed as Officer in charge Beetles Destruction Savanne as from the 8th December.

Mr. J. Dupouy and Mr. F. Pitot were appointed as Assistant Officer in charge Beetles Destruction Moka and Flacq as from 27th December 1926 and 1st February 1927 respectively.

Mr. D. R. Roucheconste relinquished his appointment as Officer in charge Tobacco Factory as from June 30th on the closing of the undertaking.

Mr. P. Dupavillon was appointed Officer in charge Tobacco Grading Warehouse as from 1st July.

Mr. W. Bourdet was appointed fifth class clerk as from 8th August.

Mr. D. Lamy was appointed sixth class clerk as from 2nd July.

Mr. J. V. Ramlowat relinquished his appointment as Assistant Inspector Co-operative Credit Societies as from 30th June.

Mr. M. Burrenchobay was appointed Inspector Co-operative Credit Societies as from 1st June.

The operations of the various divisions are reviewed in the following pages.

ENTOMOLOGICAL DIVISION.

The Entomologist reports as follows :

Campaign against Phytalus Smithi.—The results of the campaign 1925-26 were summarised in a special report printed and distributed amongst those concerned. By the middle of December another focus of infestation was detected in the district of Flacq at St. Julien Village where it was ascertained that the insect had spread over an area of about a thousand acres, but the only locality where the infestation is actually noticeable is over some 500 acres at Bon Espoir Estate. As in previous occasions immediate measures were adopted to deal with the pest.

Experiments on the control of insect pests.—In 1927 experiments were conducted at Moka for the control of *Phytalus* grubs with Cyanogas and Vaporite, the results of which have been the subject of a special report which has been printed and distributed to those concerned. The experiments showed that Cyanogas is a very powerful insecticide and may render great service in the protection of young canes infected with *Phytalus*.

Importation of useful insects.—A prickly pear coccus was obtained from the Director of Agriculture of Ceylon early in the year which is very harmful to *Opuntia Bilenii* the Ceylon prickly pear. It was hoped that this insect would breed on our common prickly pear *Opuntia tuna* and proved as useful as in Ceylon in the destruction of that plant. Great difficulties were encountered for the rearing of this species for various reasons, but it is hoped that success in the end will be achieved. It is expected during this summer to distribute them in land infested with the species of prickly pear.

Insect Pests-Coconut.—The disease prevailing for the last few years on the coconut tree finally proved to be occasioned by an indigenous scale insect *Aspidiotus destructor*. A survey of the whole Island was made with a view to ascertaining the extent of the pest and notices were served on owners to compel them to apply appropriate remedial measures. To this effect a Leaflet giving full particulars concerning the life history of the insect was printed and distributed to the public. Natural enemies of this scale insect were found in small numbers so that information was asked from Ceylon with a view to obtaining other natural enemies if possible which could be imported in Mauritius to fight the pest.

About 294 notices were served, in the majority of cases they were complied with, with the result that the insect has been kept in check.

Tobacco.—An outbreak of the tobacco beetle was reported by the British American Tobacco Company whose factory was severely infested with the pest. Advice was given with a view to getting rid of the insect which was brought in control within a short period and without serious loss to the Company.

Tobacco plants suffered in certain places from the attack of a Tineid Moth *Phthorimaea operculella*; adequate measures were taken to cope with the pest. Cut worms again seriously affected various crops including tobacco.

Palms.—of various species suffered from a number of scale insects particularly of *A. Mauritianus*, *A. ficus*, *Asterolecanium spectabile*.

The Flamboyant plant suffered from the attack of a species of *Argyroploce*; the caterpillar of which bored into the tips of young shoots. Spraying with either Lead Arsenate or Paris Green proved very useful wherever it was applied as detailed by this Division.

Red Spider.—(*Tetranychus* sp) interfered with the various crops and chiefly with various peas grown as assolements.

Thrips on onion were also recorded as attacking this in various localities.

Artichokes again suffered much from the attack of the micro lepidopteron *Pjorbe Berkendarella*.

Bananas were reported as in previous years to be severely attacked with the stem beetle *Cosmopolites Sordidus*. Instructions for coping with the pest were issued to those concerned.

Many other pests of minor importance were as in previous years reported to this Division and were dealt with as usual.

Insect affecting domestic animals.—The fowl flea was noticed to have spread over a larger area with the result that heavy losses were sustained by poultry breeders specially in the dry district where the insect thrives much better than on wet land.

A new pest of poultry—*argas persicus* was detected for the first time at Quatre Bornes where it had invaded a poultry run which had to be destroyed by fire. A Leaflet was prepared dealing with these two pests and distributed to the public.

A bird louse—*Menopon biseriatum* was noticed as being very harmful to poultry and causing the death of birds in many cases. Experiments were made with a view to finding some remedy to rid the animals from these parasites.

Diseases of poultry.—Investigations were continued on poultry diseases; a considerable number of dead and diseased birds and rabbits were received for diagnosis. About 70 post-mortems were made and advice given for treating the various diseases so detected. Late in the year a severe epizooty prevailed on ducks; 25 died within 2 days, it was ascertained that the disease was caused by a *staphylococcus aureus*, a microorganism which had not yet been recorded as pathogenic on those animals in this country.

A good many cases of haemorrhagic congestion were noticed on ducks and hens sometimes affecting the liver, and sometimes the ovaries. Although no microorganisms could be detected there is still reason to believe that it may be an infectious rather than a physiological disease. As a rule only plethoric birds were noticed to be affected with the disease, the removal of such birds to other places or a change in their diet succeeded in putting a stop to the evil.

Examination of plants and fruits.—114 inspections were made in connection with the importation of fruits, plants, cuttings, tubers consisting of 366 cases of fruits, 64 parcels of tubers, 26 of rose trees and 75 of other live plants.

59 parcels of cuttings, tubers and live plants, and 607 cuttings of canes were examined in connection with the exportation of plants to other countries.

Contribution to the Revue Agricole.—Many articles dealing with insect pests and farm-yard animals were contributed to this Revue.

Education.—The Entomologist delivered a series of lectures at the College of Agriculture on poultry raising and the Scientific Assistant on Zoology and Entomology; three lectures and two laboratory period a week.

A series of lectures on Nature Study was delivered by the Scientific Assistant to students of the Training College.

Miscellaneous Work.—Included (1) visits paid to sugar estates and small planters by the Entomologist and his Assistant with a view to inspecting diseased plants and giving advice on various Entomological questions.

(2) With a view to obtaining precise data respecting the spread of various Cryptogamic diseases affecting sugar cane, chiefly gummosis and red rot, the staff of this Division worked jointly with that of the Botanical Division during a period of about 4-5 weeks; the work consisting chiefly in examining canes on various sugar estates and at various bala ces and Railway Stations, together with laboratory work respecting inoculations on culture media.

(3) A number of blood smears, about 150, together with animal faeces were submitted by the Veterinary Division for detection of parasites.

Publication.—Two Leaflets, one on the Fowl Tick and the other on the Coconut scale insect were published during the course of the year. A new edition of the Bulletin "Poultry in Mauritius" is being printed and will soon be ready for delivery to the public.

CHEMICAL DIVISION

The Chemist reports as follows:

I.—Laboratory Accommodation

The Mansfield Oil Gas Apparatus has been enlarged by the erection of a second gas holder to provide an adequate supply for the Departmental laboratories as well as the College of Agriculture. The installation has given complete satisfaction during the year.

II.—*Work performed for other Government Departments.*

A considerable amount of work was done for other Departments, especially for the Government Railways and the Treasury.

The work for the former came under two heads: (a) Examination of the deposit, etc, on a copper plate cut from the fire box of a locomotive, and of the coal used, to determine the cause of the corrosion of the copper plate, and (b) The examination of coal which was causing serious clinkering trouble in locomotives.

(a) The deposit on the copper plate was found to contain considerable quantities of sulphur. The sample of coal showed the Calorific value of 13,490 B. T. V., and a sulphur content of 0.53%. The average sulphur is insufficient to account for the corrosion, and it was suggested that probably the moisture content of the coal was too great, the moisture in the fire box causing the oxides of sulphur to react more vigorously with the copper.

(b) As a result of constant clinkering troubles in locomotives, samples of coal and clinker were submitted for analysis. It was noticed that the percentage of small coal was extremely high. Numerous impurities were also found, such as slate like material and coal with thick veins of pyrites running through it. The ash in the coal and impurities was found to vary from 15.3% to 18.7% in the coal and 59%–79% in the impurities. The pyrites behaved typically on heating, as it burnt with the blue flame of sulphur, sulphur dioxide being evolved and ferric oxide left. The clinker in the fire box consisted of fused ash together with large pieces of infusible ash. The clinker in the flue tubes was different not having fused, it would seem that this was caused by small coal carried into the tubes by the draught and there forming a more or less solid mass. It was also shown that the Specific Gravity of good pieces of coal varied from 1.32 to 1.38 and that of the impurities from 2.04–2.22, so that it should be possible to clean the coal fairly easily.

The work done for the Treasury was concerned with the testing of denaturants for power alcohol. A sample of wood naphtha was received and examined, but found not to be in agreement with the standards required according to British Regulations. A formula was suggested for denaturing power alcohol with wood naphtha and Simonsen's oil alone, no Pyridine being used. Subsequently this formula was abandoned.

Subsequently temporary denaturants were recommended as the supplies of pyridine and Simonsen's oil in the Colony had run short. Later the formula for a denaturant was drawn up, the object being the elimination of Simonsen's oil on account of its high price and the difficulty of obtaining it.

III.—*Investigational Work*

Several lines of investigation work were carried out during the year.

(a) Availability of Phosphates in soils.

A further series of experiments regarding the availability of phosphates in soils has been carried out, the action of basic, neutral and acidic phosphatic manures being investigated. The soil used was from a field of the Central Experiment Station which had a pH value 6.4, and the manures applied were (a) basic slag (b) precipitated phosphate (c) double superphosphate. The action of different applications of these manures and also the application of these manures together with lime was tested. The availability of the various manures after an interval of two months had elapsed was tested by Dyer's 1% Citric Acid method. Later maize seedlings were grown in the different samples of soil and determinations of the total and inorganic water soluble phosphorus were made by the calorimetric method of Deniges. Again it was found that only a very small percentage of the phosphate applied was soluble in 1% Citric Acid and when lime was applied at the same time, the solubility in Citric Acid was reduced.

When the maize plants were examined the roots of those grown in the soil treated with precipitated phosphate looked the healthiest, whilst as a group the plants in the soils treated with lime and phosphates were easily the best. Thus it is seen that the maize seedling made the best growth where the solubility in 1% Citric Acid was least.

One result stood out very prominently when the determination was made of the amounts of phosphoric oxide in the inorganic and organic forms soluble in distilled water; the amount of inorganic phosphoric oxide soluble in water is greater in those soils treated with lime and phosphates than in those treated with the same quantity of phosphates alone, or treated with double quantity of phosphates alone. Considering the total phosphoric oxide it was found that it was approximately the same in the soils treated with lime and phosphate and in the soils treated with double the quantities of phosphates, and that in the soils treated with the same quantity of phosphates as the lime and phosphate trials the quantity was much less.

Work was also started on the availability of phosphates in a highly calcareous soil. The soil used was one derived from coral formations, and consequently contained 85.5% calcium carbonate together with a certain amount of organic residues, iron and aluminium. Only superphosphate and precipitated phosphate were tried in this experiment, and it was seen that the phosphoric oxide was very much more available at the end of a period of two months in both cases in this soil than in the normal soil, about 50% of that applied being soluble in 1% Citric Acid solution.

(b) Potash in the soil.

Experiments are in progress to see if potassium in the soil may be fixed in a condition not readily available to the plant. In these experiments, both potassium nitrate and potassium sulphate are being used with and without simultaneous applications of molasses. The availability of the potash in molasses is also being tested. The amount of available potash will be determined by two methods:—Dyer's 1% Citric Acid method and by Hissinks replaceable potassium method.

(c) Physical analysis of soils.

The pipette method recommended by the Sub-Committee of the Agricultural Education Association has been tested against Osborne's Beaker method, and fairly comparable results have been obtained, the clay fraction in the majority of cases being slightly higher by the pipette method than by the beaker method, so that it would seem that the clay fraction is being efficiently dispersed in spite of the highly ferruginous nature of soils in the Colony. A much more extensive series of experiments is intended before the method is introduced as a routine method.

(a) Soil Survey.

All the original work in regard to the soil samples from the Moka District has now been completed, and in addition the Keen Raczkowski figures are being determined. It is hoped to publish these results shortly.

(e) Discoloration of Mauritius Hemp.

It has been remarked that Mauritius Hemp on storage changes from a clear pale cream colour to a reddish brown one, thus rendering difficult the question of establishing standard grades. A series of trials was set up to find the conditions under which this colour change takes place. It was found that the greatest discoloration took place when the fibre was exposed to light and air, but that fibre kept in a sealed bottle in the dark showed practically no discoloration in a period of nine months, whether in the presence of calcium chloride or not. It was thought that possibly the pulp which remained in the fibre might be the cause. Consequently one sample of fibre was thoroughly well washed and scrubbed until free from pulp, and hung up in the light. This sample became almost as badly discoloured as the unwashed one kept under similar conditions. It would seem that the discoloration is due to slow oxidation changes in the fibre, as a similar colour may be produced by the action of a solution of bleaching powder on the fibre. These slow oxidation changes probably take place quickest in the presence of light.

(f) ANALYSIS OF MILK FROM THE GOVERNMENT DAIRY, CUREPIPE—The analysis of samples of milk was carried out periodically during the year, only butter fat and solids not fat being determined. The monthly averages are given in the table below, from which it can be seen that the butter fat content is quite satisfactory, but that the percentage of solids not fat frequently falls slightly below 8.5%.

<i>Morning Milk</i>													
Month No. of samples	January 4	February 7	March 5	April 5	May 5	June 4	July 5	August 7	Sept. 3	Oct. 7	Nov. 7	Dec. 8	
Fat	2.8	2.8	2.75	2.8	2.5	2.8	2.75	2.8	2.95	3.0	3.2	3.0	
Solids not fat	8.4	8.3	8.5	8.35	8.2	8.3	8.3	8.25	8.25	8.4	8.25	8.3	
<i>Evening Milk</i>													
No. of samples	5	7	5	6	5	4	5	8	3	6	7	6	
Fat	3.6	3.6	3.5	3.7	3.5	3.6	3.65	3.7	3.3	3.75	3.7	4.0	
Solids not fat	8.6	8.45	8.7	8.5	8.45	8.4	8.4	8.45	8.35	8.4	8.5	8.3	

There does not seem to be any very marked seasonal variation, except that the milk in the last three months of the year is of better quality than in the other nine months in regard to butter fat content.

(g) CALORIFIC VALUE OF BAGASSE—The Calorific values of the samples of cane fibre taken from the experimental canes of the 1926 crop were determined and the results have been submitted to a sub-committee of the Technical Conference dealing with the question. These determinations were made as it had been found in factories that when bagasse from seedlings canes was fed to the furnaces, the pressure of steam in the boilers dropped to a very considerable extent. However no significant and constant difference was found in the calorific values of the various fibres and consequently it is not to be expected that there will be any great difference in the fuel values for the bagasses obtained from the different canes. The difference is thought to be due, therefore, not so much to the difference in calorific value as to the difference in physical texture, some canes having a soft fibre, which presses into hard mats and therefore does not burn readily.

(h) ROOT ROT OF THE SUGAR CANE.—A certain amount of this disease, from which no causal organism has been isolated, exists in the Colony. It is now suggested that unfavourable conditions may so weaken the plant that infection by certain fungi may take place thus causing root rot. Mc George suggested as one of the unfavourable conditions a certain hydrogen ion concentration in the soil with a resultant sub-toxic concentration of aluminium

salts in the soil solution. Consequently samples of soil were taken from adjacent areas where canes were healthy and diseased and the pH values determined, to see if there was any marked correlation between the pH value and the incidence of disease. As far as could be ascertained there is no correlation whatever, so that some cause other than hydrogen ion concentration must be sought as the primary factor.

(i) **THE UBA MAROT SUGAR CANE.**— Weekly analyses were carried out on samples of this cane from both manured and unmanured plots. It is a cane which gives exceptionally heavy yields per acre, but its sucrose content is far from satisfactory. These weekly analyses were performed from the beginning of December. At the commencement the sucrose content of the unmanured canes was about 7%, but at the end of September it had dropped to 4%, after which it rose until at the beginning of December it had risen to 12%. The manured cane was as a rule a little richer than the unmanured cane, and the purity a little higher. It is suggested that this is a very late maturing cane, which might make an excellent parent for crosses.

IV.—Routine Analyses

The routine work of the Chemical Division showed a very considerable increase during the year under review as compared with the preceding year.

The analyses performed are as follows:—

		Samples received	Estimations
Guano melange ...	...	27	113
Lime ...	...	41	41
Dipping Solution...	...	47	75
Phosphatic manures	...	18	18
Fumier ...	...	13	31
Essential Oils ...	...	14	42
Cane juices ...	...	1,089	2,178
Miscellaneous ...	...	62	154
Total ...	...	1,331	2,652

Due to the large number of outstanding debts for analytical fees, no analyses are now performed unless the fee is paid in advance. In previous years, it has been customary to determine the arsenic present as arsenite only in dipping solution, but in the light of information obtained from the Secretary of Agriculture, Union of South Africa, it is now recommended that the arsenic present both as arsenite and arsenate should be determined.

In addition to the advisory work in connection with other Government Departments, the advice of the Chemist was sought from time to time in relation to questions regarding manuring. On several occasions personal visits were made to estates and advice offered, whilst in other cases reports were submitted dealing with the various queries.

V.—Publications

(a) A Bulletin—"The Preparation of Farmyard Manure under Mauritius conditions", No. 38 General Series, —was published during the course of the year.

(b) A leaflet on "The Chemical Control of Dipping Tanks" has been prepared for the guidance of owners of dipping tanks.

(c) A report on Chenopodium Oil was published in the *Revue Agricole*, together with the report from the Imperial Institute.

(d) Articles were published in the *Revue Agricole* on the following subjects:—

1. Fuel values of Mauritius woods.
2. The use of Urea as a nitrogenous fertiliser.
3. Soil acidity and the Root Disease of sugar cane.

VI.—Education

The usual duties in relation to the teaching of Chemistry at the Mauritius Agricultural College were performed by the Lecturer in Agricultural Chemistry and Assistant Chemist. These duties consisted of the delivering of two lectures and the supervising of two laboratory periods weekly in each class. In addition the Assistant Chemist delivered lectures on Forestry and Economics to one class.

A Departmental Committee, consisting of the Chemist, the Acting Botanist and the Acting Assistant Entomologist, was appointed to draw up a scheme for the teaching of Nature Study in Elementary Schools. A detailed report was submitted, together with a suggested syllabus, for the teaching of Nature Study and Gardening. Later a syllabus was drawn up for the Monitors' Examination in Nature Study, and another for the Teachers' Examination, for the latter, a course of lectures and laboratory exercises was also laid down.

The Lecturer in Agricultural Chemistry was appointed Presiding Sub-Examiner for the following University of London Examinations:

- (a) Matriculation Examination January 1927.
- (b) Matriculation Examination June 1927.
- (c) Intermediate Arts and Science Examination July 1927.

In addition to these, the above officer was appointed one of the four examiners for the examination for the Registration of Agricultural Chemists.

BOTANICAL DIVISION

The Acting Botanist reports as follows :—

Research work was performed on :

- (1) Mosaic of Tobacco, Tomato, Capsicum and other members of the Solanaceae.
- (2) The diseases which affect coconut trees and palm trees specially the Royal Palm *Oreodoxa regia*.
- (3) The diseases of the Filao tree *Casuarina equisetifolia*.
- (4) On the distribution of plants which are poisonous to stock and on the ecology of weeds which invade pasture lands.

A complete survey was made all over the Island with a view to studying the conditions correlated with outbreaks of the various diseases which affect sugar cane and to determine the extent of the losses incurred through the prevalence of such diseases.

The activities of this Division were also engaged in the study of diseases affecting minor crops and forest trees, on general advice to planters concerning disease questions and on miscellaneous work such as examination of imported plants and of plants intended for exportation.

Apart from his other duties the Plant Inspector prepared a sectional herbarium containing specimens of most of the noxious weeds which invade cultivated lands and pastures, which harbour insect pests, or which for various reasons are of economic importance. He also continued the rearrangement of the valuable herbarium of Mon Plaisir.

The Acting Botanist delivered lectures in the College of Agriculture and supervised the laboratory work of the students. During the College vacations, a course of lectures followed by laboratory work was delivered to certain members of the staff, the subject treated being elementary Botany, plant diseases and the legislation regarding the importation and exportation of plants or vegetable products.

A system of periodical surveys amongst the new cane varieties raised at the Central Experiment Station and at Mon Plaisir was started with a view to ascertaining the degree of resistance shown by these varieties towards the various diseases which affect sugar cane in this country.

SUGAR CANE DISEASES

Gummosis.—There are strong reasons to believe that Gummosis which was very widespread all over the Island has been the cause of the reduction in the crop of the year under review.

The White Tanna which covers 56% of the total area under cane in the Colony was found to be highly infected with the disease.

The prevalence of Gummosis may be ascribed to (1) insufficient care in selecting planting material, (2) to a diminution in the degree of resistance of the White Tanna towards the disease, (3) to the atmospheric conditions which have been very favourable to the development of the disease.

Gummosis was also detected on M. 131, M. 87, M. 55/1182, M. 55, Port Mackay and Louzier. The D. K. 74 was also found infected though to a small extent this variety appears to offer considerable resistance towards that disease.

Owing to the prevalence of Gummosis a survey on a large scale was undertaken with a view to estimating the percentage of cane stems showing macroscopic symptoms of the disease i.e. exuding gum at the cut ends or showing a very large number of characteristically reddened vascular fibres. The method followed was to take two hundred canes of each of the varieties White Tanna, D.K. 74, 131 and 55 at random from the cane carriers and loading stations at the different estates; the results obtained are tabulated in Appendix V.

Smut—caused by *Ustilago sacchari* was observed on ten estates all situated on the coast belt and in the drier parts of the Island, this disease is not responsible for serious losses, its importance during the period under review has been even less than during preceding years on account of the wet atmospheric conditions which have prevailed during the first months of the growing season. The varieties affected were M. 131, D. K. 74, R. P. 8 and M. 55.

Streak—On seven estates symptoms of that disease were seen on the leaves of the R.P.8. Similar symptoms were found on the leaves of various grasses.

Red Rot caused by *Colletotrichum falcatum* was found commonly all over the Island where canes had suffered through the attacks of borers, a very severe outbreak of the disease on the D. K. 74 caused heavy losses on one estate.

The investigations made have shown that outbreaks of that disease are generally subsequent to that of the moth borers of sugar cane and that in this country these insects are as a rule responsible for the outbreaks of that disease.

The D. K. 74 shows little resistance towards the attack of the fungus.

Pineapple Disease.—caused by *Thielaviopsis paradoxa* caused less damage than usual as heavy rains during the planting seasons promoted rapid development of the buds and roots on the cuttings.

A Leaflet was published on that disease and on the treatment of planting material with Bordeaux Mixture.

Planters were advised to take measures with a view to eliminating the Pineapple disease factor which plays an important role as regards replanting (repiquage)—this has often to be done on a very large scale and many planters are too much inclined to consider it as a normal agricultural practice.

The disease was this year reported on eight estates.

Root Disease.—Reported on nine estates. There are good reasons to believe that Gummosis on tolerant varieties may play a certain role in the development of symptoms of this disease which, as a rule, is also observed only when the physical conditions of the soil are defective for normal growth

Diseases of Plants other than Sugar Cane

Coconut palms.—At the beginning of the year a request for advice on the treatment of dying coconut trees at Pointe aux Sables was received from the Forest Department; investigations were immediately undertaken and it was found that the death of the trees was caused by a scale insect *Aspidiotus destructor*. These results were communicated to the Entomologist and the officers of the Botanical Division worked in conjunction with those of the Entomological Division with a view to conducting rapidly a campaign against this pest which had started to spread all over the Island killing the trees with great rapidity. Advantage was taken of the regular inspections thus made in coconut plantations to study the diseases which affect this palm.

The following diseases were recorded for the first time :

Bitten-leaf Disease.—This disease caused by *Thielaviopsis paradoxa*, the pineapple fungus of the sugar cane, was found to exist in Mauritius. Trees suffering from the disease were observed on five estates.

Bud Rot.—Trees with dying cabbages were examined and it was found that they suffered from a tree bud rot.

Two bacteria were isolated from the young internal lesions, they were studied at the Bacteriological Laboratory and found to belong : one to the Genus *Eberthella*, the other to the Genus *Serratia*.

Owing to pressure of work in other directions, it was not possible to conduct transmission experiments and the conclusion drawn is that a Bud Rot very probably caused by a bacteria of the *Eberthella* group and the Bitten leaf disease caused by *Thielaviopsis paradoxa* are important diseases commonly affecting coconut palms in Mauritius.

Filao.—The experimental plots at Les Bouchons were kept under observation. The so called "Smut" disease caused considerable losses in the plantations of *Casuarina* along the coast of Savanne. Two fungi a *Diplodia* and a *Pestalotia* were isolated from the diseased tissues of these trees and were inoculated in the stem and root tissues of healthy trees in Grand Port. Up to the present the inoculated trees appear unaffected.

In the district of Riviere du Rempart, at Old Grand Port and near La Ferme Reservoir in Black River, a new disease characterised by the peeling of the bark around the main stem and on a limited number of the side branches of young trees was observed during the last months of the year.

A peculiarity of that disease is that the lesions are as a rule situated at about 12 to 15 feet from ground level and that only trees of a certain age (four to six years old) are affected. By the end of the year the causal organism had not been discovered.

Tobacco.—Mosaic was commonly found in the plantations and especially on the ratoons.

Researches conducted on the Mosaic of different species of *Solanaceæ* showed that the Mosaic of Tomato is transmitted to tobacco and that tobacco plants inoculated with the tobacco virus developed the disease in an acute form.

Tobacco was also found suffering from various types of Leaf Spots and Mildew was observed on a small area in a field.

Potato (Solanum tuberosum)—Numerous outbreaks of the blight, caused by *Phytophthora infestans* were recorded.

Other Diseases Observed.

Bacterial Wilt of Earthnuts.—Beau Bassin, Industrie.

Sclerotial Wilt of Earthnuts.—Réduit plot.

Septeriose of Tomato.—All over the Island.

Mosaic of Tomato.—Beau Plan, Bambous.

Bacterial Wilt of Tomato.—Notre Dame.

Smut on Sedges.—Petite Rivière.

Streak on Grasses.—Practically all over the Island, varieties affected *Setaria* spp., *Cenchrus echinatus*, *Coix lachryma*, *Digitaria* spp.

Ergot on Grasses.—Various parts of the Island on *Paspalum dilatatum* and *Panicum maximum*.

Die-back of Manioc.—Notre Dame, Cluny.

Hemileia vastatrix on Coffee.—Belle Vue Montocchio.

Anthraxnose of Coffee.—Belle Vue Montocchio.

Citrus canker.—Belle Vue Montocchio.

Back Rot of Cabbages.—Pamplemousses, Vacoas, Flacq.

Alternaria leaf spot on Cabbage.—Vacoas.

Anthracnose of Mango trees.—Port Louis, Rose Hill, Beau Bassin.

VETERINARY DIVISION

The Government Veterinary Surgeon reports as follows :—

Importation of Animals.—During the year the following animals imported into the Colony were landed after inspection :

Foreign Countries			Dependencies		
Poultry	...	1,049	Cattle	...	324
Cattle	...	6,356	Goats	...	3,020
Dogs	...	6	Pigs	...	1,602
Horses	...	63	Sheep	...	726
Rabbits	...	22	Dogs	...	3
Pigs	...	241	Turtles	...	19
Goats	...	3			

Animal Quarantine Station.—One Charolais bull and one cow imported from France for breeding purposes were kept under one month's observation at Fort William Quarantine Station. Three Angora goats imported from the Union have also undergone one month's quarantine. Fifteen dogs imported during the year were placed under 6 months quarantine in the Government kennels, most of them have been subsequently delivered to their respective owners. One cat is under quarantine at its owner's premises.

Government Animals.—Weekly visits were paid to animals of the different Departments, and several treated for the following affections :

Police Department : Four horses for limping, two for wounds caused through accidents, and three for punctured hoofs by nails. One mare was treated for suppurative arthritis, and was subsequently destroyed as being unfit for work.

Medical and Health Department (Central Stables) : Three mules and one donkey treated for lameness, one mule affected with myocarditis was destroyed the disease being incurable.

(Curepipe Sanitation).—One bullock died of congestion of the lungs, three others treated for lameness, one from Colics, and another one for pneumonia.

(Mahebourg Sanitation).—One bullock treated for Colics, and a second one for lameness, one bullock died of Surra.

Stock Farm.—One Catalonian donkey was destroyed, the animal being affected with Surra. The Friesland bull, Réduit Chiefstain, was treated for lameness and cured. One Hissar bull treated for Enteritis. All the animals of the Farm were treated with arsenic owing to a case of Surra in the vicinity.

Government Dairy.—The Friesland bull "Imperator" was treated for "fics" in the hind feet and cured. One cow was treated for abscesses and the malgache bullock for lameness.

Meat Inspection.

Seizures of two tubercular carcasses were maintained at Flacq and St. Pierre Abattoirs. Two cows under age slaughtered at Flacq were seized, the meat placed at the disposal of the Poor Law Commissioner, and the owners prosecuted. About 15 farrow cows and heifers under age have been allowed to be slaughtered.

Case of Cruelty.

On twelve occasions, animals have been examined at the request of the police Department for cruelty, and the owners prosecuted. One bitch and one pig were examined for suspicion of poisoning and reports forwarded on each occasion.

Report of Death.

237 deaths were reported to this Department during the year. Investigations in the vicinity where these deaths occurred were made. In some cases Surra was detected, manioc poisoning was also reported and numerous cases due to Colics, parturition accidents, and old age.

Contagious Diseases

Red Water.—This disease was detected on two herds where dipping was not regularly practised the number of affected animals was about 20. Trypan blue injections were made with satisfactory results on one of the herds. The second one was less successful since owing to the conditions prevailing the animals could not be stabled, and kept stalled feeding.

Surra.—During the year 13,488 animals were examined and 72 cases of Surra detected amongst which 12 equines which were slaughtered. Until October 1927 only 12 cases of Surra were recorded and from that time, owing to the lack of pasture and run down the generally condition of animals by the crop, 30 cases of this disease were detected in 3 months October to December.

Tuberculosis.—As the result of the appointment of the two additional Assistant Stock Inspectors, tuberculin tests were made on 375 animals during the year. 19 positive reactions were recorded amongst which 5 old animals were slaughtered. The tests were carried out specially on breeding herds and on a few milch cows :—

			Animals treated		Positive reactions
Breeding herds	...	...	351	...	19
Milch cows	...	...	24	...	Nil

B. C. G. Vaccine.

As a measure of prophylaxy for the immunisation of calves for Tuberculosis, inoculations of B. C. G. Vaccine have been carried out on newly born animals. The vaccine is being prepared by the Bacteriological Laboratory and delivered by the Department of Agriculture. The number of doses delivered from June 1927 is 257.

Lectures and Demonstrations at the Agricultural College

Courses of lectures and demonstrations in Veterinary Science were delivered during the year to the second year students.

STATISTICAL DIVISION.

The Statistician reports as follows :—

Agricultural Statistics.—The Blue Book statistics relative to Agriculture were supplied to Government. Statistical data were also supplied to the International Institute of Agriculture, Rome ; to the Board of Trade, to the Colonial Secretary's Office, and Immigration Department, etc.

Quarterly reviews of local prices of certain essential articles together with index numbers were issued. Monthly reports on weather and crop conditions and forecasts of sugar production were prepared and submitted to Government and to various interested local bodies.

The results of the field experiments conducted by the Department in relation to variety and manure tests were subjected to the usual statistical analysis.

During the year, an analysis was begun, on statistical lines, of the results of cane growth measurements performed by the Botanical Division in 1925-26

Meteorological.—The meteorological service of the Department was continued on the same lines as heretofore. Observations of the temperature of air and of evaporation of soil temperature at depths of 3 in, 6 in and 12 in, of daily rainfall, and continuous record of air temperature are obtained at the Central Experiment Station Réduit, while temperature of air and of evaporation and rainfall are observed at four secondary stations, viz : Royal Botanical Gardens, Pamplemousses, Abercrombie Nursery Port Louis, Nursery Gardens, Curepipe, and Barkly Experiment Station, Beau Bassin. In addition most sugar estates contribute rainfall observations. These data are reduced and coordinated to assist in the work of crop forecasting and for general agricultural questions connected with climatological factors. Summaries are published in Appendix I of the present report.

Educational.—The general management of the Agricultural College was carried on as usual, under the direction of the Principal, with the help of the College Clerk.

Lectures in Physics were delivered once a week to first year students, each lecture being followed by laboratory exercises. Lectures in Applied Mathematics were delivered to the same students once a week and, from September, twice a week ; to second year students, lectures in more advanced Physics were delivered once a week.

Special work.—From March 1st to June 15th, the Statistician acted as Officer in charge of the weather service.

SUGAR TECHNOLOGICAL DIVISION

The Sugar Technologist reports as follows :—

Cane Selection.—The mass selection plot at Highlands was selected according to Shamel's method. Unfortunately, there were no particularly striking stools. A certain number amongst the best, however, were chosen and planted.

Visits to Factories, Investigations.—Twenty four factories were visited during the grinding season, many of them repeatedly and on special request.

The defecation of the juice was easily performed in most factories all over the Island. Difficulties, however, were encountered in the same factory as last year. This is possibly due to a lack of phosphates in the juice.

The glucose ratio of the juice was low on the average, and hence the molasses were not as well exhausted as usual.

The micro organism isolated from the mucilaginous gummy substance clogging the filtering gauze of Peck Strainers was studied. It is a short spore former bacillus, gram positive, with square shaped ends growing on agar agar in large colonies with fluorescent edges. It turns ordinary bouillon turbid, forming on its surface a thick pellicle with fluorescent edges. It coagulates milk after two days at 37° C. It grows freely in beet root juice, forming a thick visquous pellicle on the surface. This bacillus shows a great similitude with *Bacterium gelatinosum* described by Glaser.

As stated in last year's report, no *leuconostoc* was detected in any factory in the Colony.

For the first time, a double crusher has been installed in Mauritius. The tandem in question was formerly composed of one crusher and four mills. The results obtained were satisfactory, but would have been more so, if crushers of the Fulton type had been used.

The Lafeuille crystallizers referred to in last year's report were reinstalled so as to avoid the mechanical difficulties of the first year's installations. The results obtained were good, but in both factories the drop in purity and the diminution of the relative proportion of massecuites were not as high as claimed by the inventors.

Water cooling devices were placed in open crystallizers in several factories with very satisfactory results, both with A and B massecuites.

A sugar drier was erected in a factory of the central plateau. It appears that the results obtained were not so good as expected, because of certain mechanical defects in its construction.

Investigations were carried out on the amount of sulphurous acid (SO₂) present in plantation white sugars manufactured during the 1926 crop. A method of direct titration was devised and after ascertaining that it gave reliable results, it was adopted. The conclusions arrived at were: 1o that direct consumption sugar produced in the Colony contains less than the authorised maximum of 70 parts of SO₂ per million, 2o that the proportion of SO₂ depends on the treatment of the syrup (*clairce*): it decreases in factories where the syrup is subsided and is still lower where phosphoric acid is used for clarification.

Control Mutuel.—Thirty three factories contributed to the "Controle Mutuel" and returns were regularly distributed fortnightly amongst contributors. A new feature is the publication of the names of nineteen of the factories with permission of the owners. This adds considerable interest to the "Controle Mutuel," and it is hoped that in future authorization will be given by all the factory owners to publish the names of their usines.

Educational.—A full course of lectures in sugar technology was delivered to the third year students of the College of Agriculture. Weekly lectures on Sugar House Chemistry and Chemical Control and on the cultivation of the sugar cane were delivered to the second year students. Practical demonstrations were given in the laboratory. Practical laboratory work was performed by students, after lectures under the supervision of the Sugar Technologist.

The second year students visited sugar factories in detail during the grinding season and followed the work of the factories; the third year students visited in detail several factories during the off season with the Technologist.

A laboratory note book was prepared by the Sugar Technologist for publication and use by the second and third year students.

Miscellaneous.—Articles were written by the Sugar Technologist for publication in the *Revue Agricole* and in the *International Sugar Journal*.

The Sugar Technologist acted as honorary secretary to the Mauritius Sugar Industry Conference 1927.

Mr. Sejourné, Manager of the Sugar Company of Nossi-Bé, paid an official visit to the Colony in October, and Mr. R. Payet, Ingenieur de l'Ecole Centrale de Paris, sugar factory owner and manager in Reunion Island arrived in December. They visited factories with the Sugar Technologist and took interest in the work in hand in this Division.

GOVERNMENT DAIRY

The Officer in charge Dairy reports as follows:

Yield of Milk—68,647½ litres of milk were produced during the year and were disposed of as follows:

Supplied to Government Institutions	...	46,311 litres
Sold to the Public	... ..	13,939 "
Fed to calves	... ..	7,215 "
Samples for control	... ..	1,106 "

The yields given by each cow are shown in Appendix III

Births.—19 births were recorded comprising 15 females and 4 males.

Deaths.—2 deaths occurred on calves both from peritonitis. Three cows died during the year: 1 from pneumonia, 1 from the presence of foreign body in the stomach and 1 as a result of scalding through dipping.

Abortion—5 cases of abortion were recorded and experiments are in progress, with the assistance of the Bacteriological Laboratory, to determine the actual cause of abortion.

Sales—1 cow was discarded and sold during the year; 5 bull calves and four heifer calves were also sold.

Enlargements—The erection of the new stable which was started in October 1926 was completed in February 1927 and 14 heifers were stabled therein.

Stone and galvanised iron quarters were erected for the Assistant Officer in Charge and the labourers; a new rat proof store room and a new bullocks stable were also erected. Further enlargements comprised a chaff cutter and a maize grinder, both run by a 3 H. P. petrol engine.

Chemical and Bacteriological controls of the milk were maintained throughout the year. The latter demonstrated that milk equal in bacteriological purity to grade A certified milk is being produced at the Dairy.

During the year a Committee of the Council of Government was appointed to enquire into the working of the Dairy.

The effect of this has been to give additional publicity to the work of the Dairy and to demonstrate the advantages of the modern methods introduced and the possibility of producing clean milk under conditions obtaining in the Colony.

TOBACCO DIVISION

The Acting Tobacco Officer reports as follows:—

The growing importance of this industry has increased work in this Division during the year. Until the end of September charge of this Division was held by Mr. G. Corbett who proceeded on leave of absence at that time, since then acting charge has been held by Mr. Lesur.

The whole time staff of the Division comprised the Officer in charge, the Supervisor of the Government Grading Warehouse and one Travelling Instructor, while in addition the part time services of the Agricultural Superintendent and one additional Instructor, has been engaged.

The Industry has made considerable strides during the year. The repeal of Ordinance No. 19 of 1890 has rendered impossible the compilation of exact figures for the area cultivated, but estimates made by the Division indicate that at the end of the year 2,000 acres were planted under the crop as against 800 at the end of 1926. Proposals are at present under discussion for the registration of all areas under cultivation and there will, if they are given effect, afford precise information for the present year.

The estimated total production, at a minimum of all grades of tobacco for the year, is 338,000 kilos cured leaf. This figure is obtained from returns supplied by the Collector of Customs and from deliveries at the Government Tobacco Factory and at the Government Grading Warehouse.

The number of flue curing barns erected or in the course of erection during the year was 53. In November, Ordinance No. 47 of 1927 was passed imposing an excise tax of R. 1.00 per kilog of tobacco manufactured in the Colony.

In framing this legislation the advice of the Division was sought and given.

In September a "Tobacco Growers Association" was formed and co-operated with the Division on framing proposals for the registration of the growers and the control of diseases and of seed supply.

As the result of these discussions it is proposed to appoint two additional Tobacco Instructors during 1928.

A special experiment station was organised at Barkly Beau Bassin for tobacco work. This is chiefly concerned with the trial of varieties, manurial experiments and the breeding and selecting of improved strains of seed for sale to planters. A flue curing barn has also been erected at this Station for the purpose of conducting flue curing trials on new types.

Much interest has been shown by planters in the form of construction of barns and the standard of building has greatly improved; with increasing experience there is a marked improvement in the quality of the tobacco coming forward.

It is clear that the best season for planting tobacco is April, although where irrigation water is available good crops can also be obtained during the dry months of the year. December-January planting is inadvisable, partly on account of risk of cyclone damage and also because owing to the high humidity which obtains in January, February and March leaf curing is much more difficult than during the drier months.

The blue variety of tobacco continued to be chiefly cultivated; experiments have however shown that the Gold Leaf and the Yellow Pryor varieties give a superior class of leaf and it seems not unlikely that selected strains of these varieties will ultimately supplant the Blue variety.

The Division has maintained its inspectional and instructional services throughout the year. 1,360 visits were paid to plantations by Officers of the Division and a regular service was maintained for the training of estate employes in flue curing methods.

Considerable quantities of literature on the subject were also distributed. The efforts made in this connection have met with widespread appreciation from the planting body.

The question of the export of tobacco assumed importance during the year. The steps taken to organise this side are detailed in Part I of this annual Report. A trial shipment of leaf was made at the end of April while representative samples were despatched for display at the Tobacco Exhibition held in London in April 1927.

The Tobacco Grading Warehouse came into operation in the commencement of December. It is situated in the premises at Line Barracks formerly occupied by the Government Tobacco Factory, and has been fitted with necessary appliances for the grading, conditioning and packing of tobacco for export.

Mosaic disease of tobacco was considerably in evidence and experiments carried out in the Botanical and Entomological Divisions showed that the disease is capable of transmission from other Solanaceous plants to tobacco. The vector of the disease is still under study.

Proclamation No. 51 of 1927 under the Plant Diseases and Prevention Ordinance gave power for the destruction of all ratoon tobacco which is one of the factors responsible for the dissemination of the disease and also provided for the compulsory uprooting of infested plants.

The Tobacco Factory which has been maintained at the Line Barracks since 1919 was closed during the year and stocks disposed of, as it was held that the existence of 6 factories in Port Louis afforded ample provision for the local disposal of produce.

AGRICULTURAL AND EXPERIMENT STATION DIVISION.

The Chief Agricultural Officer and the Assistant Agricultural Superintendent report as follows :—

EXPERIMENT STATIONS.

Experiments with canes.—Varietal and manurial experiments with canes were carried out in different parts of the Colony. At the Central Experiment Station Réduit 120½ tons were reaped and sold to Trianon Estate. At Pamplémousses 78½ tons were cut and sold at Rs. 11.60 per ton.

Two new manurial plots were established at Réduit in Fields I & III. A new varietal field was planted at Sans Souci Estate with selected varieties.

Seeds of cane varieties D.K. 74,55, D.109,131 & 33 were sown at Pamplémousses ; numerous seedlings were raised, 1310 were selected and planted out in one hole trial. From the 1926 seedlings, 160 varieties were propagated in 6 holes trial.

Cane tops of the most promising varieties were distributed to several estates which had applied for them.

Central Experiment Station.—Varietal and manurial experiments were carried on with canes ; Fields 12, 9 & 7 were planted with cane varieties and Fields 2, 5, 10 & 8 stood as manurial plots. All these fields except field 9 which ran as virgin were reaped and the canes sold to Trianon Estate. The total yield was 120,560 Kilogs.

The new manurial plots were established for experiment in Field I and a portion of Field III.

Experiments were carried on with 44 varieties of sweet potatoes, 12 of yams, 8 of Eddoes and Tannias, 8 of ground nuts.

Coix edulis, Broom Corn, were also planted. Seeds of the following plants were received from Ceylon, where they are used for green manuring ; on the whole they gave fair results :

Indigofera endecacophylla, Centrosema pubescens, Calapogonium mucunoides, Pueraria javanica, Vigna oligosperma.

Planting materials were supplied to planters of the Island, and on many occasions were also sent abroad.

Experimental distillation of essential oil of Eucalyptus (various kinds), Camphor, Cinnamon, etc were carried out.

Barkly Experiment Station.—Considerable improvements were made at this new station during the year. The old unsightly buildings and stone walls were removed, the land levelled and prepared for cultivation. New metalled roads were made as follows :—

From Office to Fields 3 & 4, a length of 500'x16' wide

„ Pine apple Plantation to Orchard „ 259'x16' „

„ Curing Barn to Mental Hospital road 843'x12' „

„ Main Road to Orchard 269'x 8' „

„ Office to Grading Shed 449'x 8' „

„ Main Road to Office 68'x 3' „

Water pipes for irrigation purposes were laid out in the Orchard along a length of 339 feet and in Field No. 2 along a distance of 125 ft.

A plant shed 50'x50' and 7' high was erected close to the lower pond ; it is provided with ten concrete platforms 19'x4' and two smaller ones 19'x2' on which to place plants for sale to the public.

The revenue obtained amounted to Rs. 556.72 cs.

The Orchard was weeded, all vacant spots were planted with selected varieties of Mangoes, Peaches, Ananas, Bananas, Avocado pears, Citrus, pecan Nuts, etc. 100 layers of Letchis were made. The Letchis crop was sold by public auction and fetched Rs. 70

An experimental pineapple plantation was made, the varieties planted are the Queen, Maingard, Bourgault, and Smooth Cayenne.

Tobacco plantations were made in order to raise seeds for the public. The varieties grown included Gold Leaf, Yellow Pryor, Bourbon, etc. Experiments are being carried out to obtain by selection seeds from vigorous and healthy plants for distribution to planters.

Twenty kilos and thirty five grams of seeds were distributed free. 127,950 tobacco plants were sold at Rs. 2.50 per thousand.

Plantations of different varieties of Manioc, Sweet Potatoes, Yams and Leguminous green manure plants were also grown.

Experiments with Economics.—Twenty plants of “Hydnocarpus Wightiana” (Chaulmoogra) were planted at “Mon Plaisir” where they are growing well.

Seven “Pecan Nut” plants were also successfully established on the same land.

Experiments were carried out with the following economics :

Sweet potatoes	with	32 varieties
Manioc	”	30 ”
Yams	”	12 ”
Eddoes & Taunias	”	6 ”
Ground Nuts	”	9 ”

Corchorus olitorius, C. Textilis and Broom Corn were also planted.

Seeds of the following leguminous plants which are used as green manure were received from Java : Indigofera endecaphylla, Nigua oligosperma, Pueraria Javanica, Calapogonum macunoides, Centrosema pubescens, Crotalaria juncea, Crotalaria cajanaefolia.

The seeds were sown in drills five feet apart, germination was satisfactory, the plants are growing vigorously ; the results obtained will be given in the next report.

Plantations of “Gold Leaf” and other tobacco varieties were made in order to raise seeds for distribution to the public. The ripe leaves were sent to Réduit to be cured.

Stock Farm.—The following births were recorded :—

- 3 bull calves half breed Holstein Friesland
- 2 heifer calves half breed Holstein Friesland
- 1 bull calf pure breed Holstein Friesland
- 1 bull calf pure breed Ongole
- 1 heifer calf pure breed Ongole

One bull and one cow of the Charollais breed and belonging to the “Association des Eleveurs” were also stabled at Stock Farm. A bull calf of this breed was also born.

Only two cases of death occurred : one case of colics and one suspected poisoning on a heifer pure breed Holstein Friesland and a cow half breed Friesland.

An auction sale was held in July under review and the following animals were sold :—

Two pure bred Hissar cow, one pure bred Hissar bull, 4 pure bred Sindhi bulls, 1 pure bred Holstein Friesland bull, and 1 pure bred Holstein Friesland cow.

Besides the above, sales were also effected to various persons at different times, of the following :

- 1 heifer calf quarter breed Holstein Friesland
- 2 bull calves three quarter breed Holstein Friesland
- 2 bull calves quarter breed Holstein Friesland

14,784½ litres of milk were produced of which 8,164½ litres were supplied to Moka Hospital, 3,916½ litres to Victoria Hospital and 2,703 litres either sold privately or fed to calves.

One Ongole bull and one Hissar bull were sent at different time for service on the following estates : Les Salines, St. Antoine and Belle Mare.

The following services of bulls were recorded at Stock Farm Réduit.

- Pure Hissar Amir VIII—1
- Pure breed Holstein Friesland Réduit Chieftain—23
- Pure breed Ongole Hati II—2
- Total 26

Poultry and Rabbitry.—A consignment of the following birds was received from South Africa :

- Australop.—1 cock and 3 hens
- Light Sussex.—1 cock and 3 hens
- White Wyandotte.—1 cock and 3 hens
- Ancona.—1 cock
- Black Minorca.—1 cock
- Rhode Island Red—1 cock and 3 hens

Only a few rabbits and guinea pigs were reared ; after a serious outbreak of coccidiosis which occurred at the end of 1926 and which caused many deaths, no steps were taken to renew the rabbitry.

Roads and Buildings.—The roads all over the Experiment Station were improved ; the main road was remetalled and tarred, the borders and drains were repaired. A new road was opened for facilitating traffic to and from the Stock Farm.

All buildings received attention. The quarantine station for dogs was transferred to a new site.

The construction of the Farm School was begun by November.

Abercrombie Nursery.—This nursery continues to fulfil its useful purpose of supplying economic, fruit and ornamental plants to the public. The sales during the year amounted to Rs. 1,850.68 cs.

The coconut experimental plantation was regularly weeded and supplies made where necessary. It is proposed to enclose the whole land with a *Pithecolobium* (bred and cheese) hedge and also to plant grass on several plots infested with *Cyperus*; this work has been started.

There is a growing demand for ornamental plants like *Bougainvillea*, *Lagerstroemia* and different species of *Cassias*.

Stock Garden Réduit.—This nursery was kept in good condition. It is chiefly used for teaching practical horticulture to agricultural students and also for raising plants for distribution to School Gardens.

Experiments with Smooth Cayenne and newly imported varieties of pineapples are also being carried out.

Several beds have been planted with Teneriffe onion plants with the object of raising seeds.

A row of pecan nut plants has been planted along the fence in order to observe the growth of this plant at Réduit compared with other Districts.

Curepipe Gardens.—The work of the relaying and planting the beds at Curepipe Gardens was continued. The collection of ferns, *Amarylis*, *Caladiums*, *Gloxinias*, *Begonias* and other ornamental plants was increased by propagation and new seedlings.

Two varieties of "Chinkerichee" lilies imported from the Cape were greatly admired when in flower; they have been propagated and sold to the public.

A collection of the following plants was brought back by the Chief Agricultural Officer on his return from South Africa:

Ferns.—*Nephrolepis* *Fosteriana compacta*
 " *Scholzellii*
 " *Milsii*
 " *Gracillimia*
 " *Elegantissima cristata*
 " *Neubertiana*
 Adiantum *Gloriosa*
 " *Imbricatum*
 " *Gordei*

Ornamental plants.—*Oleander variegata*
 " dark red
 Poinsettia pink var
 Dais cotinifolius
 Ligustrum Japonicum *Marginatum aureus*
 tricolor
 Elcaguns simonii *tricolor*
 Cestrum Philippa Jane
 " *rubro roseum*
 " *cynea*
 Golden Cypress

and a collection of bulbs from the cape.

All these plants arrived in good condition and are doing well.

The main drive was improved by spreading a layer of coral sand on its surface and then rolled: this work has much improved the appearance of the gardens.

A small pineapple plantation was started for raising plants for distribution.

The Rosery attracted many visitors during the following season. A sum of Rs. 224.45 was collected for sale of budded rose plants.

The rainfall during the year was as follows:—

January	...	...	28.98	ins.
February	...	...	26.33	"
March	...	...	54.56	"
April	...	...	9.35	"
May	...	...	7.20	"
June	...	...	5.85	"
July	...	...	12.30	"
August	...	...	17.07	"
September	...	...	5.33	"
October	...	...	4.84	"
November	...	...	8.71	"
December	...	...	13.00	"

Total 193.52

Royal Botanical Gardens.—Several improvements were carried out during the year. The irregular and unsightly borders of the stream in the Ravine were straightened and the edges neatly lined with stones. All boulders on the lawns in the immediate vicinity were blasted and removed; the holes were filled up and turfed over.

The rustic bridge was completely repaired.

The stone borders of beds in the Fernery were properly redressed and white washed.

The road leading to the Fernery and the "Hyophorbe amaricaulis" Avenue in the Ravine were metalled, the Avenue was also widened along its whole length.

Previous to the Agricultural Show, a general cleaning was done in the vicinity of the Mon Plaisir buildings. Several useless and unsightly trees were uprooted. Old drains were filled up, the ground levelled in different places and the roads metalled.

All the kiosques and seats were repaired. Only light repairs were done to the buildings; provision has been made in the next year's estimates for general repairs to the Overseer and Assistant Overseer's quarters.

The posts for erecting the Bandstand, sheds, fences and stalls for the animals were obtained from the Eucalyptus plantation made in 1925.

As usual, all the lawns were kept mown and swept throughout the year. The paths, avenues, canals, lakes were regularly cleaned.

Propagation of fruit trees and ornamental plants was carried out in the Nursery. 425 Letchi layers and 224 Mango grafts were made.

Through the courtesy of Mr. Adrien Wiehé, Manager of Labourdonnais Estate, a certain number of mangoes were grafted in the orchard of the Estate. Ten of the following varieties were sent to Barkly Experiment Station for trial: 1 Victoria, 2 Norman, 2 Orphée, 2 Genève, 1 Christian, 1 Pignon d'Inde and 1 Petite Jose.

One plant each of varieties Orphee, Christian, Norman, Pignon d'Inde and Petite Jose were planted in the Mango Varietal Plantation at Mon Plaisir.

The Police Band played once a month in the Gardens from June to September.

A successful Agricultural Show was held at "Mon Plaisir" on the 24th and 25th September. The attendance was numerous especially on the second day.

A Fancy Fair was also held in the Gardens on the 28th of August in order to raise funds for local charities.

Her Royal Highness the Duchess of York visited the Gardens on the 2nd June. At the request of the Director of Agriculture, Her Royal Highness planted two "Araucaria Cunninghamii" to commemorate her visit.

Le Réduit Grounds.—These grounds were maintained in good condition; many permanent improvements were made to the various sections thereof.

The General aspects of the portions in the immediate vicinity of Government House has been greatly enhanced by the extensive additions and modifications carried out in the main building and out houses. The improvement of the swimming bath has greatly contributed also to the embellishment of the surroundings. All the earth paths at the various parts of the Grounds were properly metalled and spread with sand; the steps along those paths were converted into permanent stone gradients and the covers to various canals replaced by concrete slabs.

At the flower sections, the tuberous Begonias and Gloxinias were most attractive whilst the flower beds, greenhouse and ferneries were maintained in good order.

The Kitchen Garden produced vegetables all the year round, and the strawberries yielded a record crop.

This section won a Silver Medal for its collection of vegetables at the Pamplémousses Show, besides other medals for strawberries, Asparagus, etc.

School Gardens.—Regular visits were paid to all the school gardens by officers of the Department. A supply of seeds, plants, tools, fencing material and manure was maintained throughout the year.

Prizes were awarded for the best kept school garden as follows:

1st prize of Rs. 50 to Highlands Road C of E School
2nd " 40 to Camp Diable Government School
3rd " 35 to Old Grand Port R. C. School
4th " 30 to Plaisance Orphanage C of E School
5th " 25 to R. des Anguilles Government School
6th " 20 to Mahebourg Government School

Exhibits from several school gardens were sent to the Pamplémousses Agricultural Show and the following prizes were obtained:—

One Silver Medal to Plaisance Orphanage for collection of vegetables
One Bronze Medal to Camp Diable Govt. School
One Diploma of Merit to Mahebourg Govt. School
" " Old Grand Port R. C. School
" " Highlands Road C of E School
" " Souillac Govt. School

With the appointment of an Assistant Agricultural Instructor, it was possible to inspect all the Government Schools in the Island and where there was suitable land available recommendations have been made for establishing gardens.

Six school gardens were registered during the year :

Moka Government School Bois Chéri Road
Ruisseau Rose Government School
Plaine Magnien Government School
Chemin Grenier Government School
Congomah Government School
Central Flacq Government School

*Food Settlement St. Martin —La Ferme—*As in previous years, maize and manioc were the principal crops grown, all the plots were taken and planted by members of the local Co-operative Credit Society. The crops obtained were fairly satisfactory, big crops cannot be obtained on account of scarcity of water; in most cases the settlers have to rely on rainfall for their crops.

Farm School.—Effect was given to the proposals for the establishment of a Farm School at Réduit during the year.

It is designed to improve and replace the Agricultural Apprentice system formerly in vogue and in its present form provides for the training of 16 boys chosen from the higher standards of the Elementary Schools in gardening and agriculture.

The course of instruction provides for 2 hours teaching per day in Agriculture and Horticulture as well as English, Arithmetic, Geography, Mensuration, Keeping of books and Accounts and writing reports. In addition the boys receive 6 hours per day practical instruction in agriculture, horticulture, care of farm animals, carpentry and metal work.

The course lasts two years and from the pupils, cadetship in the Agricultural and Forestry Departments will be subsequently filled which may lead to junior posts in the two Departments. It is expected that the pupils will also find employment on estates.

The School is under the charge of the Assistant Agricultural Superintendent, while an Overseer has been appointed to assist in the work.

During the year the erection of the School room was completed by the Department, while the work of cleaning and laying out the School Garden was commenced.

It is anticipated that the School will be in full running order early in 1928.

RODRIGUES

The Acting Agricultural Superintendent reports as follows :—

The rainfall at the Experiment Station was as follows :

Oyster Bay			Oyster Bay		
January	...	6.86	Brought forward	...	40.59
February	...	8.11	July	...	3.52
March	...	20.03	August	...	2.56
April	..	1.38	September	...	1.69
May	...	2.36	October	...	1.58
June	...	1.85	November	...	3.67
			December	...	3.11
Carried over		40.59			
			Total	...	56.72

Rainfall was very heavy in January, February and March at Oyster Bay 35 inches more than half the total fall in that period. Rain fell on 138 days. The highest daily total being 5 inches on the 29th January.

Work in Experiment Station.—A flue curing barn has been built on Plot D (nursery). It was completed in December.

The main drive from Jetty to Superintendent's Quarters has been sanded and demarcated by white stones.

Drains have been completed on either side of the main road between River and Orchard Plots. Paths and drains have been completed between several plots. A hand rail has been added to the bridge.

Maize.—Variety White—Sown November 1926, reaped March 1927, Yield 1,456 lbs. per acre.

Rodrigues Selected Red.

Sown	Nov/26	Reaped	June/27	Yield	1,416 lbs. per acre
"	Feb/27	"	June/27	"	1,830 " "
"	July/27	"	Nov/27	"	1,724 " "

Cotton—Long Staple Upland.

Sown May/26 Reaped July/27 Yield 320 lbs. clear, 188 lbs. Stained (528 lint).

Teneriffe Onions.—Planted May/26 Reaped October/27 23.100 lbs. per acre.

Tobacco.

Variety	Planted	Reaped	Acreage	Yield	Yield per acre
Zimmer	...Oct/26	Jan/27	1/9	102 lbs.	922 $\frac{3}{4}$ lbs.
Sterling	...	"	1/16	71	1826
Bourbon Blue	...Nov/26	March/27	1/6	155	930
Gold Leaf "	...Aug/27	Dec/27	1/2	163	326
" "	...Nov/26	March/27	1/6	112	672
Joiner	...July/27	Failed			
Blue Pryor	...Nov/26	March/27	1/6	182	1092
Bourbon Yellow...	...May/27	Sept/27	1/4	62	248 (diseased)
H. H. Burley	...Jan/27	Failed			

Ginger.—Planted Dec/26 Reaped August/27 Yield 2424 lbs. per acre.

Safron.—Planted Dec/26 Reaped Aug/27 Yield 6424 lbs. per acre.

Pistache.—Planted Nov/30 1926 Reaped June 1927.

Varieties.	Yield per acre.	Varieties.	Yield per acre.
Tennessee	... 806 $\frac{1}{2}$	Virginia Bunch	... 2014 $\frac{1}{2}$
Spanish Pea Nut	... 1353	Refusque	... 597
Bunch	... 801	Gambia	... 907 $\frac{1}{2}$
Virginia Runing	... 943		

Sweet Potatoes.

Variety	Planted July 1926 Reaped May 1927 lbs. per acre	Planted Dec. 1926 Reaped July 1927 lbs. per acre	Variety	Planted July 1926 Reaped May 1927 lbs. per acre	Planted Dec. 1926 Reaped July 1927 lbs. per acre
Pierson	...11,880	... 3,036	Barbados Barrel	... 6,732	... 2,112
Egypt : Bebai	... 4,356	... 528	Egypt : White	... 4,224	... 3,762
T. 4	... 3,828	... 2,376	No. 4	... 2,640	... 3,432
Rouge	... 4,092	... 2,376	Turkey claws	... 6,072	... 2,046
Red Bermuda	... 8,316	... 1,980	Chully	... 2,838	... 4,092
Spooner	...10,428	... 2,772	Joes	... 4,752	... 4,092
No. 5	... 1,452	... 1,188	Sealy's Seedlings	... 1,650	... 1,056
Jersey	... 2,376	... 1,716	Georgia Jam	... 1,188	... 2,094
Blanche	... 4,356	... 792	d'Arifat	... 3,564	... 1,716
T. 3	... 2,244	... 1,848			

Orchard.

The following trees were planted during the year :

2 Orange Trees, 25 Local Limes, 6 Letchis layers received from Mauritius, 7 Avocado Pear local.

Kikuyu grass has been planted in this Plot.

The results from the experiments with cotton as far as regards quality and yields are encouraging, and a larger area will be planted.

Tobacco did not do well owing to attacks of root rot and mosaic diseases. Experiments also were made on the planting of safron and ginger.

Stock Farm—Catalonian Donkeys

Birth	... Nil
Death	... 2 Jennies
Present Number	... 6 Jacks 17 Jennies

Sindhi Cattle

Birth	... 1 Bull 1 Heifer
Death	... Nil
Sold	... 2 Young Bulls
Present Number :	... 2 Bulls, 2 Cows, 2 Bulls (young), 1 Heifer.
6 services were recorded by Rajah.	

Friesland Cattle

Received from Mauritius in August :

One $\frac{1}{2}$ Bred Friesland Bull

One pure Bred Bull Calf

The pure Bred Bull Calf died in November.

Present Number : One Bull

Pigs—Large Black
 Birth ... 1 Gilt
 Death ... 3 Boars 2 Sows
 Present Number : ... 1 Boar 2 Sows
 123 services were recorded.
 One Boar went on loan to Mr. Oxenham from 4/10 to 13/12/27.

Nigerian Sheep
 Birth ... 37 Rams 26 Ewes
 Death ... 11 " 22 "
 Shipped to Mauritius ... 13 " 18 "
 Present Number : ... 52 " 92 "

Cattle—One of the Sindhi bulls suffered from Rheumatism. The large black pigs also have not done well. It is thought that in general the unsatisfactory condition may be due to Phosphate deficiency at Oyster Bay.

Trefles Co-operative Credit Society.—Four loans amounting to Rs. 229.75 in capital and interest were paid in. Three applications for loans amounting to Rs. 330 were granted by the Committee. Rs. 100 were received from the Colonial Government. Rs. 3.80 were paid in for interest by Savings Bank.

Receipts Rs. 333.55, Expenses Rs. 330, Cash in Bank and in hand Rs. 59.96.

<i>Sale of Produce</i>		
Forest Produce	...	Rs. 1,940.05
From Experiment Station	...	552.42
		<hr/> Rs. 2,492.47

<i>Reafforestation</i>			
Bois Noir	...	9,400	Pomme Singe ... 13,180
French Bois Noir	...	10,000	Terminalia arjuna ... 3,400
Badamier	...	2,300	Eucalyptus ... 4,025
Jamrosa	...	1,000	Mourouque ... 32
Mahogany	...	400	

<i>Recruiting</i>			
Bois Noir	...	5,000	Pomme Singe ... 2,400
French Bois Noir	...	8,000	Filaos ... 700

<i>Land Tenure</i>		
Application received for lease	...	322
Not recommended	...	41
Leases signed	...	96

(Agriculture 84 acres, cattle post 21 acres, shop site 5 acres, residential 7 acres, town lots 1 acre)

Solitude estate which was purchased by Government for the protection of the water supply contains considerable plantations of coffee in the lower part. This area which is not affected by the water conservation scheme was handed over to the Agricultural Department during the year and the work of getting the plantation into order was started.

About 30 kilos of Vanilla was shipped to Mauritius for sale from this Station.

Agricultural Show—A successful Agricultural Show was held in Port Mathurin in September.

Agricultural Conditions—Agricultural conditions were favourable during the first part of the year, but in the latter months very dry weather was experienced.

Visits of Inspections—The Director of Agriculture visited Rodrigues in July; he inspected the Experimental Station and Forest Plantations and paid visits to different parts of the Island.

He consulted the Magistrate and Agricultural Superintendent on various questions of Agricultural policy.

The Government Veterinary Surgeon visited Rodrigues in April in connection with the raising of the quarantine against Rodrigues on account of disease on goats.

He inspected the Stock of the Station and animals throughout the Island.

Export—The exports of Rodrigues shipped to Mauritius for the year were as follows:—

Tobacco	...	352 Bags	Cuttle Fish	...	744 Bales
Garlic	...	365 "	Goats	...	2,197
Beams	...	244 "	Sheep	...	779
Accacia Seeds	...	13,500	Pigs	...	1,449
Salt Fish	...	3,966 Bales	Cattle	...	360

BOARD OF AGRICULTURE

The Board of Agriculture established under Ordinance 30 of 1912 consists of :—
His Excellency the Governor—President.
The Director of Agriculture—Vice President.

The following members were appointed in 1927 :—

The Honourable L. Noel	H. G. Ducray Esquire,
„ M. Martin	E. Rouillard Esquire,
„ P. Raffray	Gabriel Regnard Esquire,
„ R. Gujadhur	Adrien Wiehé Esquire,
J. A. Duclos Esquire, C.M.G.	F. A. Nichols Esquire,
G. Antelme Esquire,	Pundit Boleram Mookteram Esquire,
G. Clarenc Esquire,	Pierre de Sornay Esquire,
J. de Spéville Esquire,	P. Montocchio Esquire,
L. H. de Froberville Esquire,	Captain H. G. Hitchcock Esquire, M.B.E.

During the year 1927 there was one meeting of the Board held on January 26th.

At this meeting the following questions were discussed :—

1. Appointment of a Sub Committee to consider measures to be adopted for standardising Mauritius tobacco for export.
2. Appointment of a Sub-Committee to deal with matters concerning the representation of the Colony at Exhibitions abroad.
3. Organisation of a District Agricultural Show at Pamplémousses in September.

PUBLICATIONS

The following publications were issued during the year :

BULLETINS

- (a) Experiments with Sugar Cane conducted by the Department of Agriculture in Mauritius.
- (b) Notes sur l'Elevage des Oiseaux de Basse-Cour et du Lapin.

LEAFLETS

- (a) Notes sur les maladies des oiseaux et leurs traitements à l'usage des éleveurs à Rodrigues.
- (b) Traitement du tabac par le procédé du séchage à l'air chaud.
- (c) La lutte contre le Surra à Maurice.
- (d) Une cause de non réussite de la plantation des cannes à sucre : le champignon "Thielaviopsis paradoxa."
- (e) La chique des poules et la tique des volatiles.
- (f) La cochenille du Cocotier.
- (g) Mosaic disease on Tobacco.
- (h) La Gommose de la Canne à Sucre.
- (i) Le contrôle chimique des Bassins à Immersion.

The following reports and memoranda were prepared and submitted to the Council of Government and to the Board of Agriculture :—

Annual Report of the Department of Agriculture for 1926.

Report on Co-operative Credit Societies to 30.6.1926.

Memorandum on points in relation to manuring and cultivating of canes.

Report on Mr. O'Connor's mission to South Africa.

A scheme for the establishment of a Pine apple Canning and of a Fruit Jelly and Jam Industry in Mauritius.

The following articles from Officers of this Department were published in the Revue Agricole :—

Le Développement de l'Industrie du Tabac	... Dr. H. A. Tempany
Métissage ou Croisement	... D. d'Emmerez de Charmoy
Le traitement du tabac par le procédé du séchage à l'air chaud	... G. Corbett
Les maladies du tabac...	...
Expériences sur le contrôle du Potato Blight	... E. F. S. Shepherd
Pouvoir calorifique des bois	... N. Craig
Principes généraux de culture intensive des jardins	... A. Valasois
Revue Météorologique...	... M. Koenig
Une cause de non réussite lors de la plantation des cannes à sucre	... W. H. Edwards
La présence et le dosage de l'acide sulfureux dans le sucre de consommation directe fabriqué à Maurice	L. Baissac

LEGISLATION

The following Ordinances, Proclamations and Notifications were issued during the year :—

Ordinance No. 7 of 1927—To amend the Animal Diseases Consolidation Ordinance of 1925.

Ordinance No. 8 of 1927—To amend the slaughtering of Cattle Restriction Ordinance 1918.

Ordinance No. 24 of 1927—To provide for the formation of a Reserve Fund to meet the necessary expenses in connection with representation of the Sugar Industry of the Colony.

Ordinance No. 46 of 1927—To make provision for the collection of an excise duty on Tobacco and for the survey of Manufacturers and Curers of Tobacco.

Proclamation No. 12 of 1927—To restrict the importation of mammals, birds, fish, etc and to prohibit other imports.

Proclamation No. 15 of 1927—To prohibit the exportation of tobacco grown in Mauritius.

Proclamation No. 18 of 1927—To provide for the treatment of a Coconut Trees Disease.

Proclamation No. 26 of 1927—To order the treatment, felling and removal of trees affected with certain Plant Diseases.

Proclamation No. 46 of 1927—To prohibit the shooting, killing, etc of any wild birds.

Proclamation No. 48 of 1927—To remit Stamp Duties and Registration Fees chargeable on instruments executed by or on behalf of the "Trèfles Co-operative Credit Society" of Rodrigues.

Proclamation No. 51 of 1927—To prevent the Mosaic disease on tobacco.

Government Notification No. 82 of 1927—Repeal of the regulations prohibiting the importation of Goats from Rodrigues into Mauritius.

Government Notification No. 148 of 1927—Storing of tobacco leaf at the Government Tobacco Warehouse for grading, export and sale.

Government Notification No. 149 of 1927—Quarantine measures in regard to Poultry imported and found to be infected with Fowl Ticks or Jigger Flea.

Government Notification No. 213 of 1927—Repeal of Article 5 of the regulations made under Slaughtering of Cattle Restriction Ordinance.

Government Notification No. 286 of 1927—Amending the regulations under Article 16 of the Animal Diseases Ordinance 1925.

EXPENDITURE AND RECEIPTS

The expenditure of the Department has been as follows :—

			Rs.	cs.
Personal Emoluments	...	...	94,227.19	
Maintenance of Gardens	...	...	15,176.37	
General Services	...	...	2,018.39	
Prevention of Plant Pests and Diseases	...	...	4,412.75	
Prevention of Animal Diseases	...	...	3,873.00	
Upkeep of Stock	...	...	11,732.12	
Subvention to Société Horticole	...	...	1,000.00	
Travelling Expenses	...	...	11,279.97	
Miscellaneous expenses Co-operative Credit Societies	...	...	20.72	
Maintenance of Experiment Stations	...	...	17,468.54	
Minor Industries	...	...	24,976.06	
Apparatus and Chemicals	...	...	4,926.86	
Nursery for economic plants	...	...	3,942.48	
Destruction of <i>Phytalus Smithi</i>	...	...	42,128.74	
			24,870.49	
Agricultural Instruction	...	...	2,116.01	
Upkeep of plantation at Floréal	...	...	442.23	
Dairy { Capital Expenditure	...	...	14,761.11	
{ Upkeep Expenses	...	...	29,581.83	
Agricultural Shows	...	...	400.00	
Installation of Experiment Station, Beau Bassin	...	...	784.41	
Improvement to Laboratories	...	...	5,000.81	
Services rendered by the Railways	...	...	5,691.60	
Purchase of raw tobacco	...	...	6,837.18	
Contribution to Revue Agricole	...	...	500.00	
International Tobacco Trade Exhibition	...	...	1,065.94	
Removal of Dogs Kennels	...	...	999.55	
Total	...	...	330,234.35	

The Receipts were:—

	Rs.	c.
Sale of flowers and plants ...	2,669.53	
Sale of Stock ..	267.00	
Services of animals ...	93.00	
Sale of eggs and poultry ...	332.60	
Sale of milk, Cattle Station ...	3,530.29	
Sale of canes ...	6,891.62	
Analytical fees ...	738.00	
Miscellaneous ...	939.00	
Sale of tobacco ...	34,821.88	
Contribution Co-operative Credit Societies ...	1,381.00	
Veterinary Fees (Customs) ...	1,084.00	
Destruction of Phytalus Smithi (Customs) ...	45,597.86	
Loans repaid by Co-operative Credit Societies ...	3,990.00	
Interest on loans ...	371.70	
Rent of Crown Lands at La Ferme and St. Martin ...	283.50	
Sale of produce, Experimental Dairy ...	26,850.39	
Sale of B.C.G. Vaccine ...	267.00	
Sale of Soamin ...	264.00	
Total ...	130,372.37	

GENERAL

Her Royal Highness the Duchess of York visited Pamplémousses Gardens on June 2nd at her express desire. Her Royal Highness was accompanied by Lady Read and by Mrs. Gilmour, Lady in Waiting, and was received at the Garden by the Director of Agriculture and the Honourable S. Fouquereaux, Deputy for Pamplémousses.

Her Royal Highness made the tour of the Gardens accompanied by the Director of Agriculture, she expressed pleasure at the charm of the Gardens and commented on their well kept appearance. Her Royal Highness planted two Araucarias in the square adjoining those planted by Her Majesty the Queen when she visited the Colony as Duchess of Cornwall and York in 1902, and which are now some 50 feet high.

The Director of Agriculture served as a Nominated Member of the Council of Government, as a Member of the Customs Tariff Advisory Committee, the Forest Board; as a Vice President of the Mauritius Sugar Industry Conference and of the Agricultural Exhibition as well as serving as Chairman of a number of Committees of the Board of Agriculture dealing with various subjects.

The Assistant Director served as a Member of the Board of the Mauritius Institute and as a Member of the Advisory Committee on Fisheries.

June 2nd, 1928.

H. TEMPANY
Director of Agriculture.

APPENDIX I.

Stations	Réduit						Curepipe						Abercrombie						Beau Bassin						Pamplemousses						
	Temperature				Rainfall		Temperature				Rainfall		Temperature				Rainfall		Temperature				Rainfall		Rainfall						
	Months	Max.	Min.	Mean	Relative Humidity	Depth of rain	No. of days	Max.	Min.	Relative Humidity	Depth of rain	No. of days	Max.	Min.	Relative Humidity	Depth of rain	No. of days	Max.	Min.	Relative Humidity	Depth of rain	No. of days	Max.	Min.	Relative Humidity	Depth of rain	No. of days	Max.	Min.	Relative Humidity	Depth of rain	No. of days
°C		°C	°C	%	mms		°C	°C	%	mms		°C	°C	%	mms		°C	°C	%	mms		°C	°C	%	mms		mms				
January	28.4	21.8	24.5	73.4	338.3	31	24.1	20.3	85	736.0	29	29.4	22.0	61	380.3	15	...	...	...	...	...	...	...	...	...	...	...	108.5	21
February	28.0	21.8	24.2	76.4	345.2	28	24.4	20.4	87	669.7	26	31.0	23.5	74	145.7	11	...	...	...	...	...	...	...	...	...	...	...	173.2	15
March	26.6	21.4	23.3	81	338.7	31	22.4	20.1	93	986.2	31	29.6	23.5	73	545.7	14	...	...	...	...	...	...	...	...	...	...	...	417.9	21
April	26.4	20.0	22.4	75	173.8	26	22.2	18.1	89	247.5	29	30.3*	23.7	70	146.5	8	...	...	...	...	...	...	...	...	...	...	...	99.8	13
May	24.0	16.5	19.8	73	72.7	29	19.9	15.3	86	183.0	30	25.2*	18.2*	75	89.2	12	...	...	...	...	...	...	...	...	...	...	...	54.2	13
June	22.6	14.5	17.8	76	31.9	30	18.1	14.3	84	148.5	28	23.8*	17.0*	76	42.6	7	23.1	14.6	65	7.0	9	32.5	14	...	...	...	...	32.5	14
July	21.3	14.0	17.0	75	59.7	29	17.0	13.3	86	312.5	30	25.5*	18.0*	77	141.7	14	22.2	14.1	73	24.7	15	69.5	17	...	...	...	...	69.5	17
August	22.1	15.1	18.0	76	251.6	30	17.5	14.1	90	433.5	31	25.5	17.0	65	141.7	15	23.3	15.9	66	217.7	15	137.5	17	...	...	...	...	137.5	17
September	23.1	14.5	18.2	71	40.7	30	18.3	14.3	86	135.2	28	26.9	18.6	66	31.1	10	24.1	15.8	65	35.5	14	26.2	13	...	...	...	...	26.2	13
October	25.1	15.6	19.8	67	38.6	30	20.2	14.7	82	122.8	27	29.9	20.0	50	30.0	7	25.9	17.5	62	15.5	6	10.0	8	...	...	...	...	10.0	8
November	26.2	18.3	21.4	73	22.6	25	21.0	17.5	85	221.2	26	30.1	20.6	53	13.5	7	27.6	19.5	64	8.5	4	20.2	8	...	...	...	...	20.2	8
December	27.3	20.1	22.9	76	166.7	31	22.7	18.3	85	330.2	26	30.4	23.0	60	251.0	12	28.7	21.0	70	145.5	12	131.8	14	...	...	...	...	131.8	14
Year	25.1	17.8	20.8	74	1880.5	350	20.7	16.7	86	4513.3	341	28.1	20.4	67	1959.0	132	...	...	...	...	...	...	...	...	...	...	1611.3	174	
					Total					Total					Total												Total				

* Uncertain.

Remarks:—The figures for relative humidity are obtained from daily readings of the dry and wet bulb thermometers at 10h and 15h. Temperature at Réduit is determined from the hourly readings of thermograms standardised daily at 6h, 10h and 15h.

APPENDIX II

Results of experiments with economics other than sugar cane at the Central Experiment Station, Reduit, during the season 1927

Name of Variety	Reduit Ks. per acre		Name of Variety	Reduit Ks. per acre	
<i>Experiments with Manioc</i>			<i>Experiments with sweet potatoes--(continued)</i>		
Constantin	... 4,420	Planted 20th April 1926	Black Spanish	... 6,090	Planted 29.12.1926 Reaped August 1927
Icery	... 4,080		Red Bermuda	... 9,135	
Trinidad IV	... 4,080		Jaune	... 3,915	
Manioc de Table	... 2,720		Trinidad IV	... 4,350	
Paloma	... 2,720		Hens & Chickens	... 3,480	
Manioc de Table No. 2	... 2,380		Pumpkin yam	... 10,005	
Trinidad 3	... 2,380		Gandia	... 1,740	
Negrita I	... 2,040		No. 3	... 6,090	
Negrita XVII	... 2,040		No. 7	... 7,395	
Trinidad I	... 2,040		No. 15	... 3,915	
Cassava bureum	... 2,040		Trinidad II	... 3,480	
Singapore	... 2,040		<i>Experiments with Eddoes and Tannias</i>		
Trinidad II	... 2,040		Violet	.. 4,420	Planted 29.12.26 Reaped 18.8.27
Australie	... 1,700		Tannia Blanche	.. 10,880	
Negrita XV	... 1,700	Tannia Blanca	... 9,520		
Butter Stick	... 680	Tannia Priete	... 11,220		
Federated Malay States	.. 340	Tannia White	... 11,560		
<i>Experiments with sweet potatoes</i>			Tannia Yellow	... 11,560	
d'Arifat	... 5,655	Eddoe Dasheen	... 8,840		
Rouge	... 4,350	Tannia Boliza	... 9,520		
Pierson	... 6,090	<i>Experiments with Yams</i>			
Jersey	... 6,960	Fugue	... 1,020	Planted January 1927 Reaped 17.8.1927	
Trinidad III	... 5,655	Cush Cush	... 340		
Bourbon	... 8,265	Bottle Neck	... 2,380		
Georgia yam	... 7,395	Oriental	... 1,700		
Elijah	... 5,220	Crops	... 2,040		
No. 4	... 5,655	Bugle Horn	... 2,040		
No. 14	... 5,220	Horn	... 2,380		
No. 18	... 5,220	Sealed Top	... 2,720		
Silver Queen	... 5,655	Lisbon	... 2,380		
Turkey Class	... 2,610	Cush	... 680		
Florida	... 5,220	Light Red	... 340		
Trinidad IV	... 5,655	Danish	... 680		
Barbadoes Barrel	... 5,655	<i>Experiments with Ground Nuts</i>			
Sealy Seedling	.. 5,220	Tennessee	... 878	Planted 8.1.27 Reaped 17.6.27	
Egyptian Iskandation	... 10,875	Virginia Bunch	... 659		
No. 1	... 6,090	Local	... 878		
No. 5	... 5,655	Big Japanese	... 659		
No. 13	... 11,310	Gambia	... 439		
No. 17	... 5,655	Spanish Peanut	... 219		
Egyptian Bebai	... 1,740	Virginie	... 109		
Shanghai	... 3,915	Virginia Running	... 32		
Blanche	... 4,350	<i>Experiments with Maize</i>			
Trinidad I	... 4,350	12 rows impure	... 1,483	Planted 29.12.26 Reaped 13.7.27	
Spooner	... 2,175	14 "	... 1,526		
Chully	... 3,915	16 "	... 1,059		
Egyptian White	... 4,350	18 "	... 3,179		
No. 2	... 5,220	20 "	... 1,483		
No. 6	... 6,090				
No. 16	... 4,785				
Yoes	... 5,655				

APPENDIX III.

GOVERNMENT DAIRY—CUREPIPE—RETURN OF MILK YIELD DURING THE YEAR 1927.

MONTHS	Carnation	Larkspur	Geranium	Clara	Hedda	Daffodil	Tulip	Thistle	Daisy	Cedara I	Cedara III	Elsenburg	Pretoria II	Pretoria I	Mahebourg	Jantji	Elsa	Curepipe	Nora	Thora
January	240	336	248	345	104	213	536	152	310	305	301	143	205	93	260	9	292	145	262	253
February	196	273	199	205	32	died	452	95	253	275	242	110	146	62	236	died	252	116	216	264
March	205	304	215	240	...	...	395	6	281	844	257	110	119	28	249	...	241	112	219	251
April	190	265	196	162	104	...	419	...	248	339	214	77	52	...	165	...	199	77	185	171
May	191	281	202	136	316	...	366	...	229	363	215	95	...	...	169	...	192	78	176	118
June	183	239	188	101	302	...	274	186	198	336	210	83	31	...	133	...	182	18	163	103
July	180	189	166	76	314	...	198	451	138	337	191	75	434	...	21	...	170	...	164	75
August	151	154	142	50	302	...	151	395	119	271	164	56	370	...	34	...	145	...	137	44
September	106	102	115	26	257	...	103	283	86	220	135	30	278	...	90	...	113	...	106	16
October	88	86	100	...	236	...	43	266	1	212	103	...	237	...	90	...	95	...	50	...
November	90	150	84	...	216	...	...	230	...	200	2	...	200	...	82	...	94	...	...	...
December	92	126	4	...	190	...	...	209	...	193	118	...	181	105	84	...	97	...	...	...
TOTAL	1,913	2,487	1,861	342	2,375	213	2,939	2,274	1,865	3,397	2,155	779	2,254	289	1,609	9	2,072	547	1,679	1,296

APPENDIX III. — (Continued)

MONTHS	St. Pierre	Hilda	Beau Bassin	Rose Belle	Flacq	Eva	Ber	Charlotte	Katrina	Violet II	Narcissus II	Violet	Mauricia	Reduit	Bianca	Candos	Coruflower	Bet II	Geranium	Total
January	321	324	304	170	223	272	306	155	393	182	158	...	...	...	...	...	...	...	...	7,572
February	220	234	227	136	156	260	238	100	352	148	120	319	91	...	...	...	...	...	...	6,277
March	190	314	227	153	53	288	244	7	210	133	105	406	303	195	20	...	...	...	...	6,459
April	143	259	170	18	67	276	12	...	14	124	57	351	346	189	366	102	...	...	...	5,689
May	124	260	163	...	29	278	...	...	275	109	...	257	364	203	455	474	...	...	...	6,104
June	103	241	136	...	358	276	177	29	268	88	...	116	350	202	433	444	...	...	...	6,155
July	79	222	115	...	376	262	567	388	239	87	...	158	343	195	433	420	...	...	...	7,071
August	45	159	86	23	309	213	523	200	221	75	54	171	285	168	395	348	31	...	...	5,996
September	14	156	64	248	261	170	461	139	204	42	337	122	222	127	316	287	55	...	...	5,294
October	...	129	44	287	245	172	421	112	178	...	285	98	210	89	143	270	1	...	...	4,302
November	...	11	3	285	225	164	397	91	155	...	238	84	196	85	...	244	...	170	...	3,696
December	...	...	...	286	196	156	385	73	158	...	241	85	190	78	...	229	...	308	242	4,031
TOTAL	1,245	2,361	1,540	1,611	2,500	2,789	3,733	1,295	2,799	1,020	1,596	2,168	2,899	1,532	2,572	2,819	87	478	242	68,647

APPENDIX IV

Distribution of Sugar Cane Diseases in Mauritius in 1927.

District	Gumming	Red Rot	Pineapple Disease	Smut	Root Disease	Streak	Minor Diseases
Flacq	14 Estates. Varieties affected: White Tanna, DK. 74, Port Mackay, M. 33, M. 55, M. 87, M. 131.	Four Estates Varieties affected: D.K. 74, M. 55, M. 131 and Senneville	Two Estates	None reported	None reported	None reported	
Riv. du Rempart	8 Estates-Varieties affected: White Tanna, M. 55, D.K. 74, M. 131, M. 33, R. P. 6.	Four Estates Varieties affected: D.K. 74, M. 33, R. P. 6	One Estate	Three Estates. Varieties affected: D.K. 74, R. P. 8 and M. 131	None reported	One Estate Variety affected: R. P. 8	Red spot of the leaf streak on one estate. Variety affected: R.P.8
Pamplemousses	13 Estates-Varieties affected: M. 55, White Tanna, M. 87, M. 80, M. 33, D.K. 74, M. 131, Port Mackay and various.	Five Estates Variety affected: D.K. 74	One Estate	Two Estates. Varieties affected: R.P. 8, D. K. 74, M. 131	Five Estates, Varieties affected; D. 130, D. 109, White Tanna, M. 33, R.P. 8	Three Estates Variety affected: R. P. 8	
Grand Port	14 Estates-Varieties affected: White Tanna, M. 55, M. 131, M. 87, Striped Bambou, St. Aubin, Port Mackay and Senneville.	Six Estates Varieties affected: D.K. 74, M. 55, M. M. 131	Two Estates	Two Estates. Variety affected: D.K. 74	Two Estates Varieties affected: M. 131, White Tanna, M. 55	Two Estates Variety affected: R. P. 8	Helminthosporium Sacchari on one estate, on White Tanna.
Savanne	3 Estates-Varieties affected: White Tanna, M. 55.	One Estate. Varieties affected: various	Two Estates	None reported	One Estate Varieties affected: White Tanna, and St. Aubin	One Estate Variety affected: R.P.8	
Moka	8 Estates-Varieties affected: White Tanna, Port Mackay, Louzior.	None reported	None reported	None reported	None reported	None reported	Helminthosporium Sacchari on one estate, on White Tanna.
Black River	9 Estates-Varieties affected: White Tanna, M. 55, Port Mackay and various.	None reported	None reported	Three Estates Varieties affected: 131 and various	None reported	None reported	
Plaines Wilhems	3 Estates-Varieties affected: White Tanna, H. 109 and various.	None reported	None reported	None reported	None reported-d	None reported	

N.B.—The above list has been worked out from the results of the field inspections and the investigations at the mill feeders carried out by the Plant Inspector.

APPENDIX V

Summary of Results obtained from a Survey for Diseases in canes collected from cane carriers of Factories and from Railway Sidings in October and November 1927

District	White Tanna canes showing apparently symptoms of		D. K. 74 canes showing apparent symptoms of		131 canes showing apparent symptoms of		55 canes showing apparent symptoms of	
	Gummosis	Red Rot	Gummosis	Red Rot	Gummosis	Red Rot	Gummosis	Red Rot
Pamplemousses	1...	9.5%	1.5%	0.5%	12.5%	10.5%	1.0%	2.5%
	2...	32.5	4.5	5.5	14.5	5.0	1.5	9.0
	3...	21.0	3.0	2.0	8.0	3.5	3.0	...
	4...	13.5	1.5	3.0	1.5	15.0	1.5	4.0
	5...	11.5	1.5	0.6	15.2	17.0	1.0	...
Rivière du Rempart	Mean	18.0	2.5	2.5	10.5	10.0	1.5	5.0
	6...	26.5	0.0	5.5	4.5	11.0	1.5	10.5
	7...	6.0	0.5	0.5	1.5	22.0	0.0	20.0
	8...	...	...	5.5	22.5	14.5	11.5	...
	9...	11.0	3.5	2.5	17.0	6.5	2.5	...
Flacq	11...	11.0	0.0	3.5	2.0	7.5	1.0	4.5
	Mean	13.5	1.0	3.5	9.5	12.5	3.5	11.5
	12...	23.0	0.5	6.0	5.0	...	...	4.0
	14...	21.0	0.5	6.0	2.5	5.5	1.0	...
	17...	0	40.0	...	...	0.0	12.0	...
	18...	27.5	1.5	...	...	9.5	2.5	4.0
	19...	26.0	4.0	...	...	...	...	...
	20...	29.5	6.0	8.0	6.5	8.0	0.0	16.0
	21...	15.0	6.0	...	...	1.0	0.5	...
	22...	16.5	5.0	...	...	5.0	0.0	...
	23...	2.0	15.0	...	...	...	...	...
	24...	3.5	12.5	...	...	...	...	...
	25...	0.0	33.0	...	...	...	...	...
	26...	25.0	12.0	...	...	1.0	12.0	...
	Mean	16.4	11.3	6.7	4.7	4.3	4.0	8.0
Moka	27...	14.5	24.0	...	...	...	...	7.5
	28...	4.5	10.0	...	...	...	...	...
	29...	0.5	5.5	...	...	...	...	...
	30...	25.0	20.0	...	...	...	...	...
	Mean	11.0	15.0	...	...	...	...	7.5
Black River ... Plaines Wilhems	32...	7.5	17.5	...	...	13.0	25.0	15.0
	33...	...	...	...	...	...	...	26.5
	34...	10.0	4.0	...	...	...	...	4.5
	35...	12.5	4.0	...	...	...	...	10.0
	36...	19.0	11.5	...	...	...	...	17.5
Grand Port ...	Mean	13.8	6.5	...	...	...	...	14.6
	37...	6.5	5.0	...	...	...	...	...
	38...	25.5	16.0	...	...	...	...	...
	39...	16.5	2.0	...	...	...	...	...
	40...	28.0	3.0	...	...	...	...	7.0
	41...	14.0	5.5	5.5	13.0	14.0	3.5	...
	42...	22.0	3.5	2.5	2.0	12.5	4.5	...
	43...	34.0	1.0	...	...	...	...	...
	44...	27.0	3.0	...	...	...	...	27.0
	45...	37.0	2.5	...	...	...	...	...
	46...	54.0	1.0	...	...	27.5	4.5	...
	47...	36.0	2.0	4.0	2.0	11.0	3.0	...
	Mean	27.8	4.0	4.0	5.7	16.2	4.0	17.0
Savanne	49...	...	...	...	...	...	...	28.0
	51...	...	...	0.0	8.0	1.5	0.0	...
	52...	10.5	1.5	...	...	4.5	0.0	...
	53...	10.5	11.5	0.0	0.0	8.0	9.5	...
	54...	12.0	5.0	8.0	4.0	0.0	1.5	...
	55...	35.5	1.0	2.0	5.5	...	...	8.0
	56...	20.5	6.0	...	...	10.5	3.5	15.5
	58...	23.0	8.0	2.0	28.0	8.0	8.5	4.0
	Mean	18.6	5.5	2.5	9.0	5.5	4.0	14.0
	Mean for whole Island	18.4	7.1	3.5	8.3	9.0	4.5	11.5

